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THE CLINICIAN OF THE FUTURE *

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CHICAGO

By the word clinician I mean the physician who comes in contact with the patient, in his bed (κλίνη), in the hospital, at his home, in the dispensary or in the private office. We ordinarily think of the clinician as opposed to the nonpracticing laboratory man, who may not be a graduate in medicine and who is not immediately concerned with the living patient—the anatomist, chemist, pathologist, physiologist or pharmacologist. My theme, therefore, is the doctor of the future who is the practitioner, who sees, examines, advises and treats patients, rather than the investigator or teacher along lines of so-called pure science. I have no special thesis to defend. I do not presume to settle definitely the many problems involved. My address, therefore, will lack the "punch" that comes from advocating ideas that seem final and unequivocally right. It will lose force because of inconclusiveness. But I cannot speak otherwise, for the solution of many of these problems lies in the future, to be evolved as time goes on. The questions are too complex; they touch life at too many points to enable any one today to essay a final analysis. The patient, the general practitioner, the hospital doctor, the specialist, the education of the undergraduate and graduate; conditions of private practice, state medicine, preventive medicine, hygiene all come up for consideration. They are not to be settled now by dogmatic ex cathedra statement, by resolution of medical organizations, by speech making or even by acts of legislative bodies. These efforts may help in the way of education and in stimulation of intelligent discussion, but they do not consummate. Only time can do that. My address might better be entitled "Stray Thoughts on the Clinician."

The clinician of the future will be human much as now. He may wear clothes of latest fashion or be indifferent as to dress. He may be of honeyed word or brusque of speech; he may be careless in money matters or shrewd and a bargainer; he may be aggressive and self-assertive or modest and self-effacing, but the human nature that is in him will be much the same then as it is now, as it was when Chaucer sang of the doctor of physic or when Homer recorded the sayings and doings of the ἰατρός. There will be jealousy, selfishness, even dishonesty, as there will be generosity, self-sacrifice and highmindedness. No plan for the clinician, no dream will make him more unhuman, more superhuman than the average of the race about him.

I imagine he will continue to work for gain, reputation, opportunity, power. If public sentiment demands a limit to his financial return, he may charge less than now for his services—or some, the general practitioner, may charge more. Or the socialistic notion may prevail and he may be obliged to submit to a legal restriction as to the character of his work, its scope and remuneration. We can, at least, hope for freedom from too rigid state control; a control repugnant to our ideas of the dignity of the profession. We trust that the clinician of the future will not be too commercial. The trade view of medicine is abhorrent. In too many articles and addresses written by physicians, the argument is based almost entirely on the money value of his services. This betrays an unfortunate trend of thought, which too emphatically views medicine as a trade. We all are human. The laborer is worthy of his hire. But is it not possible to retain some of the old tradition of medicine as a profession and not a trade?

This future clinician, what type of general practitioner will he be? What will be his relations to his patients and his colleagues? How and where is he to practice? How is he to be educated?

TYPE OF GENERAL PRACTITIONER

The general practitioner or family doctor has been the backbone of the profession. So his gradual disappearance in city and country has spread dismay among physicians and the laity. "Give us back the old family doctor," cry the people; "otherwise whom can we trust, on whom can we lean in time of illness? He is the only really dependable physician. Hospital doctors are ultrascientific; specialists are narrow-minded." "He must be preserved," cry the doctors, "and essentially as he was, the family adviser and confidant, the one who diagnosed and treated all save the most obscure and most serious diseases. He must be preserved, or the whole fabric of practical medicine falls."

There is truth in this attitude, but it is largely sentiment. Affection for the family doctor has too often blinded people to his many shortcomings. His assiduous attention in the case of the woman who dies of childbed fever three weeks after he delivered her of her first-born child, also dead, leaves a feeling of gratitude on the part of the bereaved husband, who marvels that his neighbor pays a high price for the few brief visits made by the specialist in the lying-in hospital. The old family doctor for one-half the fee made five times as many calls and even stayed at the house all night in devoted watchfulness. The neighbor has his wife and baby. He, poor deluded man, has lost both. Yet God is good, he reflects. "Thank God for our old family doctor."

We all admit in our sane moments that there is an immense amount of poor surgery, crude diagnosis, use-

* President's address, read before the Institute of Medicine of Chicago, Dec. 1, 1925.

less and harmful therapy on the part of the general practitioner. Some is so underlaid by ignorance and by overweening self-confidence—the result of misinterpreted experience—and is so direful in its consequences as to be little short of malpractice.

The difficulty is that there are two sides to the question. There is much justification for the sentimental view of the general practitioner. There is need of a doctor who has a heart, who feels with his patients, who is, in the derivational sense of the word, sympathetic, who inspires confidence as a man and friend as well as a physician, and who is not so commercial or so scientific as to see in his patient only a fee, a case, or material for investigation.

Without intending to reflect on the magnificent service of the best of the old time family doctors, who were kindly gentlemen of the finest fiber, noble, self-sacrificing and withal wise and practical scientists, I assert that the general practitioner of this type is doomed to go and ought to go. Times have changed! The demands today for a new knowledge and an increase in knowledge, for new ways of thinking, for new methods of practice are so great that a new type must be evolved. What we should be concerned with is not the attempt to reestablish the old family doctor but the new clinician, the general practitioner of the future, who without loss of the intimate personal relation that will make him trusted and loved will embody far more of the doctor, the man of learning. The new practitioner must know more of fundamental sciences and their application in medicine, and must be better able to correlate and to interpret the findings of specialists, laboratories and instruments of investigation. He must be capable of diagnosing the vast majority of ailments that come to his attention, competent to treat a large proportion of them. But of just as much importance, he must recognize his own shortcomings and will know when to call in the specialist and which man to call.

RELATION BETWEEN SPECIALIST AND GENERAL PRACTITIONER

Now to many physicians the specialist is the *bête noire*. He is anathema. There must be only a few, we are told; these must be most highly trained, select and kept apart from the great body of the general practitioner.

Whether we like it or not, specialism is here and is bound to stay, if not permanently, at least for a long season. Medical knowledge has become too enormous for any one mind to grasp it all or even a large proportion of it. No matter how carefully the textbooks and teachers try to boil it down, the practitioner cannot acquire that *all knowledge* that was more nearly possible fifty or seventy-five years ago. He may be a practitioner, but not a general, an *all* practitioner.

There is danger in specialism, it is freely admitted. Specialism is still in process of evolution. Many specialists are such in name only, a name often self-assumed. Many are narrow. Many, poorly prepared, lack broad experience and proper graduate study. They are often more concerned with technic than with diagnosis or indication for treatment. Some are offensively commercial. But in the future one type of clinician will be the well qualified specialist. He will not be confined by any means to our large cities; he will not be narrow. He will be readily available; a man as considerate of his fellow practitioner's reputation and comfort as he is of the patient's pocketbook. On him must lean heavily the practitioner, incompetent to treat certain diseases and trained to admit his incompetence. The operation on gallbladder or prostate gland, the dietetic management of the poorly nourished infant, the expert handling of the neurasthenic, the proper use in certain cases of roentgen ray, radium and perilous drugs, the skilled manipulation of instruments of precision or the technic of applied bacteriology and chemistry—these may be outside the practitioner's field. He must call in the specialist or take the patient to him. This is easy today, so easy, in fact, that the patient often goes to the specialist over the head of the general practitioner, particularly when the illness seems acutely dangerous or chronically baffling. Telegraph, telephone, good roads, the automobile and the small town hospital make specialists easily and increasingly available. With the growing popularization of medical knowledge, the general practitioner must learn to recognize the need of or the desire for the specialist, or often be left out altogether.

The relation between specialist and general practitioner must be more cordial, intimate and cooperative than now; they must be not rivals but colleagues, mutually helpful. Let the profession come out frankly and place the general practitioner on a higher plane of self respectability by taking him in as a partner of the specialist. If necessary, let there be an open—not secret—sharing of a reasonable fee, at least in many cases. This will remove the now strong temptation for the practitioner to do himself, because of the urge for money, what he is really unfitted to do. The result of this partnership will inure to the benefit of the patient, who, in spite of some of our medicine-as-a-trade advocates, is the prime consideration. The moment we fail to keep the ideal of benefit to the patient before us, practice will degenerate and will be in essence dishonest. Dr. Pusey has well put it: "For medical service—our usefulness as physicians to society as a whole—is, after all, our reason for existence and must be the chief object of our policies, as it is the standard by which our worth must be measured."

I am pleading, therefore, not for a substitution of the specialist for the general practitioner, nor for some artificial restriction of the number of specialists, but for a modified, improved practitioner and I might well plead for an improved specialist. I am pleading for more intimate and mutually helpful relations between these two groups.

EDUCATION OF CLINICIAN OF THE FUTURE

This reference to Dr. Pusey may serve as an introduction to another phase of the question of the future clinician——where he will practice and the way in which he will be educated. Dr. Pusey has done a valuable service in fearlessly and forcibly calling attention to the dearth of rural doctors and the need of some relief. I cannot, however, fully agree with him in all points and especially in the emphasis he lays on a lessening of the time and expense requirements of the medical school as a remedy. His plan is, I believe, pedagogically unsound and would be found not to work. A college that consciously trains a man to be mediocre—for in spite of Dr. Pusey's contention to the contrary that is what this plan implies; to know a little, only the essentials in the many subjects—is training along wrong lines. It is an injustice to the student. Somewhere in his course each student should be given the opportunity to learn the meaning of the word *thorough*. He should pursue the study of some subject or a few subjects far beyond the elementary phase; he should do intensive, concentrated work along that line, undeterred by the cry of those to whom this seems like specializing. Our best

students often do this now; getting into the laboratory or the clinic of some professor for special or advanced work. Our literary schools recognize this principle. They allow much freedom in their choice of studies, but an undergraduate must specialize—that is, major—in at least one subject and not spread himself out thin over a wide range of topics. Unless this is done in the study of medicine, the doctor who is turned out is mediocre: power that may be lying dormant within him and of which he is unconscious is never developed; he is a man with no particular aim, diffuse and forceless. His later work lacks live interest. He becomes a mere money getter. He loses self-respect. Unless he feels the incentive that comes from a conscious drive toward superiority in some one or a few lines, he stagnates and is soon a negligible quantity.

But more than this, a doctor with only this general diffuse training is dangerous, because he does not know his own limitations. With more thorough knowledge he would shrink from that cocksure frame of mind that leads him to undertake the major operation or to handle the therapeutic medicinal agent that he so poorly understands. Knowledge is power and should oftener be power for good. Fools still rush in where angels fear to tread. The safest man is ordinarily the man who knows the most, who especially knows a great deal about some one thing, who comprehends what is meant by detailed knowledge and who realizes the superior possibilities of expert treatment. A high grade undergraduate education in the essentials, with stress laid on one or two subjects that are studied intensively, even though five years and much money are required, will turn out a product more contented, more progressive, much safer and in every way more efficient than the graduate of the standardized low-level average course of study. *Non multa sed multum* was Waldeyer's motto.

There are defects in our medical curriculum, many of them. Much that is taught should be junked. Faulty methods are in vogue. There is too much of hidebound standardization, too little elasticity, too little freedom for the play of individuality on the part of instructor and student. Save time, if possible, in the elementary and premedical years; but five years is none too long to be profitably employed in preparing a clinician. In fact, one might not only compel the poor student, as we now do, to take six years, but might encourage the good man to lengthen his course to six years or more, at the bedside or in the laboratory, as hospital resident, fellow or research assistant. It is often said, and I think rightly, that the best preparation for a specialist is a few years of general practice. I contend that the best preparation for a general practitioner is a few years of specialism.

One more objection to Dr. Pusey's plan: Will these low standard men go to the country to supply the lack of physicians? And will the people employ them? I fear not. These ordinary doctors will largely do as ordinary lawyers do. Some will go to the country; many will flock to the cities. They did it in Billroth's time, as he recorded fifty years ago. They are doing it today. They go from the village to the small town as practitioners, or they mushroom out as specialists. If they knew more, they would know they were not specialists and would stay in the village. They need the money; they will make it in the city, or think they will, more easily than in the country. If they do stay in the rural districts the people will in any serious illness often pass them by, as they now do, and get the better qualified man from the city, though he is often better qualified only in name. If the doctor is an average man of average training, he will be accorded the standing and receive the patronage of an average man and no more. Let the well trained man from the high grade medical school go into this community. Teach him to estimate his abilities at a fair price so that he is paid, not as now for the distance he travels or for the time he takes as is a taxi driver, but for his skill, his judgment and his opinion. Teach him to be studious, to attend society meetings, to write, to observe, to record and to think at the bedside, in the laboratory and in the roentgen-ray room. Let him perfect himself in some particular phase of disease. In this way, he will be self-respecting and respected by others; he will become the family health adviser, the safe guide, philosopher and friend. What the rural districts need today is not so much more doctors as better doctors.

What I have thus far tried to stress is the point that the doctor of the future must have a training as to facts and methods and their practical application that in medical college and hospital must take about five years. Lessening this time is an injustice to the doctor, fits him for a position of secondary importance and will not force him to go to the country, or if he does go there will not cause the people in the country to employ him.

REVISION OF CURRICULUM

There are some features of our present system of educating these practicing doctors to which I would call attention. These details, though minor, may be worth noting, even at the risk of repeating what others have said. In a revision of the curriculum may not many things be dropped or modified? Many facts in anatomy available through the index, the descriptive text, the illustration and the museum specimen should not occupy valuable space in a man's memory, space more properly occupied by knowledge more frequently needed and of immediate use. May not method of thinking, technic and principles in the preclinical as well as in the clinical subjects be preferably taught in the lecture room, library, laboratory, clinic and ward by means of topics that are live and practical rather than by topics that are purely theoretical and concerned with rare occurrences or with ideas still in a hazy, experimental stage? Even Michael Foster regarded physiology as largely a study for postgraduates. Correct habits of thinking and general principles can be taught by the study of drugs like digitalis or opium as well as by some preparation that is new, and sure to be rarely used or used only in laboratory work. I once told a laboratory teacher of the attempt that had been made years before to cure pneumonia by the production of so-called aseptic abscesses produced by injection of turpentine—"derivation abscesses." He had not known of it but said at once: "That's an interesting problem. I'll put some students at work on it next quarter." Granted that it was interesting; but if he acted in accordance with his sudden impulse did he do justice to his students? Could they not have had the same training by working on some problem more nearly connected with their work of the future?

There is a trend in practice and in teaching away from pathologic anatomy which is to be deplored. I am referring particularly to gross pathologic anatomy. For many years to come, perhaps always, knowledge of altered physical conditions in disease with attendant altered function must remain the basis of diagnosis.

Pathologic anatomy is the mistress of us all, said Neusser. The laboratories have not yet entirely displaced the interpretation of symptoms and signs on the basis of pathologic anatomy. Dr. Cushing is mistaken when he says that physicians have laid aside the stethoscope for the more exact method of diagnosis by means of the roentgen ray. This is an overstatement even though the reference is particularly to the examination for pulmonary tuberculosis. How many foolish and incorrect interpretations of roentgenograms are made because of poor knowledge of pathology. The roentgenologist often undertakes to tell the pathologic lesion of which he has almost no knowledge. He is not helpful; he misleads us. Yet with such knowledge he is extremely helpful.

There is a tendency—we try to combat it but it remains nevertheless—to overestimate the value of the instrumental and the laboratory side of clinical medicine. There is an air of finality about these tests that is far from warranted by the facts, but it attracts us. To elicit a history or to make a physical examination is commonly looked on as not very scientific—as having in it too large an element of human fallibility. Figures don't lie is the old adage, and looking on instrumental and laboratory tests as mathematically precise, we feel that they don't lie, though at times they do. It is such an easy, lazy way to let the instrument do it. The Wassermann test will decide as to syphilis. The roentgen ray will tell us whether there is an aneurysm or pulmonary tuberculosis. We can test the metabolic rate or get the blood chemistry, and disregard the time honored symptoms of exophthalmic goiter or nephritis. Why must we take hours in going over the details of the history, studying stomach contents or making fluoroscopic examinations, trying to decide whether there is ulcer, carcinoma or gallstone? Why not make the exploratory operation that will decide at once?

We all recognize that such teaching or practice is wrong. It trains the student not to examine or to think but to resort to a test tube, a mechanical device or the knife of the surgeon. Worst of all, too often the student or practitioner does not think even when the results of these tests come in to him. He lets some one else do the interpreting. He accepts a long distance finding at its face value. He forgets the possibility of error on the part of the method or the technician. Even the surgeon with his hand in the abdomen or with his gaze on a lesion all too frequently errs.

The instrumental or laboratory test is often of great importance, at times of paramount importance. We may speak of a *deus ex machina* that frequently at the climax of our cases springs forth as in the Greek tragedy to solve the riddle and straighten out the otherwise hopeless tangles. Many of these diagnostic aids—I have in mind especially the roentgen ray and certain laboratory and serum tests—are yet in their infancy. Their proper place, up to the present at least, is as aids that are confirmatory and corrective. They are not the sole arbiters in the case. They are to be fitted into the evidence along with history, symptoms and signs. They are sometimes of negative or even negligible value; at other times, as I have just stated, of supreme importance. This fact should be thoroughly impressed on our clinicians even in their years of undergraduate study.

It is no new thought that the history is worth at least 50 per cent of the diagnosis. Yet until recently in some of our good hospitals histories that amounted to anything were not taken, at least not recorded. I am inclined to think that if we were to analyze our failures in diagnosis, we should find that they depended more on a hasty or incomplete history or the loose interpretation of the history than on careless or slovenly physical examination or neglected special test.

Another phase of this question is illustrated by an incident of a few days ago. In a puzzling case with striking anemia and peculiar blood findings, the intern did not record his leukocyte count of 18,000 because, according to his notion of the case—a reflection of the attending man's view—the leukocytes would probably remain as they had been, from 5,000 to 10,000. He cautiously and modestly thought he had made an error. Now his count was probably right, but his mental attitude was that which is occasionally seen in all of us—he was inclined to see in urinalysis, blood count, electrocardiogram, fluoroscopy, serum reaction and exploratory operation the thing he expected to see. This expectant, previously made up frame of mind is not alone confined to the doctor extracting a history, listening to a lung, palpating a liver or looking at a tonsil. It carries over into the laboratory and instrumental field and robs some of our instruments and technical procedures of much of their precision.

A keen observer, well informed as to medical education in Europe as in the Americas, tells me that there is a striking difference between the education and practice of physicians in Great Britain and the United States. The British depend too little on the technical side, relying more on observation and examination of the patient, while in this country too great reliance is placed on the instrumental and laboratory end. Is not his judgment good, that the best method is a well balanced combination of these two, the one confirmatory or corrective of the other? The late Sir James Mackenzie, for years a general practitioner in a small city, became a skilled observer, a close reasoner. He was inclined to magnify the importance of symptoms and the evidence of the unaided five senses and to belittle that furnished by so-called instruments of precision and by the laboratory. Even physical signs were often negligible because so easily misinterpreted. So we find him attacking the stethoscope and endocardial murmur, the sphygnomanometer and blood pressure readings, the chemical tests of the laboratory and the research of the hospitals. To his mind it was all overdone, largely wrong. The real physician and investigator was the general practitioner who studied or rather restudied symptoms—pain, cough, weakness, dyspnea. Narrow as was his view, unwarranted as were many of his exaggerated statements, there was back of it all enough of fact, perhaps more true of our country than of Great Britain, that justified him in protesting against the undue weight attached to the practical application of instrumental and laboratory tests by experts and by physicians in practice.

To guard against this tendency implies training in observation—sagacious observation, Mr. Flexner happily terms it—in reading and evaluating the work of others, in recognizing one's own and others' limitations and in knowing the meaning and limitations of the methods employed.

RESEARCH

I hope our future clinician will be under the influence of the spirit of research. Unless he comes in contact with the research man, he will be too likely to be a hack worker, not inspired by the search for the new and unknown, or even familiar with the methods of research. He will be unable to evaluate

that which is new, as it is announced to the medical world. He must take his opinions largely from others. Untrained in criticism of methods of work or habits of thought, he will be too apt to believe implicitly what is printed merely because it is printed or because it emanates from some famous clinician, well advertised clinic or much talked of laboratory. Our clinician must get some of the fire and enthusiasm of these research men in order to live and not merely exist; in order to produce and not merely to do the daily grind. Here and there the student or graduate will thrill as the consonant chord in himself vibrates in the atmosphere of research, and a real investigator will have been discovered. Investigators, like Cicero's poets, are born rather than made, but they sometimes go undiscovered.

It will be of advantage if our clinician is taught certain facts and methods by the all-time hospital clinician. The concentrative and intensive work in the one subject that I deem so important, the majoring in one topic, might well be handled by the one who has gone deep into the subject, as we expect the all-time teacher and hospital clinician to go, largely from the academic and so-called scientific side.

But clinical medicine—using medicine in its broader sense as including medicine, surgery, obstetrics and the specialists—should also be presented to our students by the one who is himself a clinician, a practicing doctor. Such a teacher should be well informed as to facts, well trained as to methods. He must be an expert in the application of his knowledge in diagnosis and treatment. He is intellectually as scientific as his laboratory or all-time colleague. Mr. Flexner's analysis of this point in the early pages of his recent book on medical education is illuminating, and is comforting to clinicians who have long felt the injustice of the too prevalent attitude of supercilious superiority assumed by some laboratory workers. To immure oneself in a hospital or laboratory does not of necessity make a man a scientist. Nor does a man who engages in practice by so doing necessarily lose his scientific habits of thought. What I am pleading for is a teacher who is a practical clinician and whose art is based on a deep knowledge of fundamentals and principles.

EXPERIENCE

The nose is often turned up at the word experience. A laboratory worker thinks he has reached correct conclusions by an animal or test tube experiment, though an honest laboratory investigator told me that he thought 60 per cent of the results of work done in laboratories was wrong in method or conclusions. But for a practitioner to learn by experience at the bedside is regarded as ridiculous. Personal bias and the injection into the observations of so many unrecognized and uncontrollable variables may easily lead to error.

Experience rightly utilized is a mighty force for good. The younger doctor stands amazed at times to see the rapidity and certainty with which the older physician makes his diagnosis—a look, a question or two, a naked ear clapped to the chest, a glance at the temperature or blood chart and the conclusion is reached. It seems almost intuitive, but is, of course, the result of many successes and mistakes, of much reading and comparing of notes and of meditation. Wrongly or loosely analyzed, experience is a power for untold evil. In the meeting of the British Medical Association in 1894 I heard a well known city doctor advocate most warmly the use of antipyrin in typhoid fever largely because he had used it in the treatment of a case of typhoid in his cousin and the cousin recovered. A tall, lanky chap, evidently a doctor from the country, rose, walked to the front, faced the audience, and said that he had a stronger argument against antipyrin in typhoid; he had used it and the patient had died, and the patient was not a cousin but a brother. He sat down. The gravity with which he made this statement was one of the most delicious features of this sarcastic thrust at the argument from experience. "How can the patient get well if he doesn't take any medicine?" a practitioner asked me last week. His fifteen years of experience had taught nothing as to the natural tendency of many diseases toward recovery.

There is no greater menace than an opinionated clinician working empirically yet honestly with his misinterpreted experience as his guide. But bedside experience based on acquaintance with scientific methods, with knowldge obtained not alone from books or the laboratory makes the high grade practitioner or clinician. When we wish a goiter removed, we send for him who has a knowledge of what a goiter is, what it means and who by operation in 500 cases realizes how and when to do the operation with the minimum of risk. In talking once with the late Christian Fenger, I casually referred to a certain man as a good practical surgeon. Dr. Fenger's ire was aroused; he stormed against the practical surgeons. "I am proud," he said, "to be known as a pathologic surgeon; one whose work is based on pathology and the dead-house and not alone on technic and practical matters. But," and a twinkle came into his eye, "if I am sick and need an operation, I want a practical surgeon to do it."

We feel that the clinician of the future should come into close contact with this type of man, not alone when the teacher is in the making as when he is an assistant or a dozent, but when he is made, when he is a big clinical teacher. His methods, his technic, his encouragements, his warnings, his statistics, his impressions even, his way of handling patients as well as the disease, and his personality should be available to the student who is to go into practice. And, parenthetically, one argument in favor of a retention in the curriculum of the large clinic or lecture is that the entire student body, not merely a favored few, may have free opportunity to see and hear the great clinical teacher and to come under the sway of his personality.

CONCLUSION

I believe, therefore, that the clinician of the future is to be a professional man and not a tradesman. He will see in his patients human beings whose distress appeals to his heart and not alone to his commercial instincts, his scientific or technical skill and pride. He will be well educated as to knowledge and methods. He will have the wisdom to use this knowledge in practice with a due sense of proportion of the value in the recognition of disease, of history, observation and instrumental and laboratory examinations. He will not pretend to know all or to do all as rightly could our practitioners of fifty or seventy-five years ago. He himself will do much less than they did. He will recognize his own limitations and appeal oftener to the expert. Between him and the expert there will be the cordial relation of colleagues and not the antagonism of rivals for trade-gain or reputation. He will be no second rate product of our medical schools but one of first rank. He will be practical but inspired to ever improving work by the spirit of investigation. While clinging fast to that which is good of the old he will be no slave to tradition, but will be able to throw aside the

disproved old for the proved new. He will be, and will be regarded as being, a scientific man. He will become the family confidant as of yore, the family adviser, well recompensed for his services. He will be self-respecting and respected by others.

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SPONTANEOUS MENINGEAL HEMORRHAGE

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While the French have developed an extensive literature on spontaneous or medical meningeal hemorrhage, comparatively little has been written on the subject by the physicians of other nations. Aside from an article by Leopold,[1] a chapter that I [2] contributed to Tice's Practice of Medicine and a case reported by Dawson,[3] there are but brief references to the subject in English. In Sweden, two comprehensive articles have been published by Ehrenberg [4] and Forsheim,[5] respectively. Only a few articles have been written on the subject in Germany. No attempt will be made to review the literature, the principal references [6] only being given.

During the fifteen years that the members of the meningitis division of the Health Department of New York City have been studying acute conditions of the central nervous system, especially meningitis, poliomyelitis and epidemic encephalitis, we have seen over thirty cases, occurring for the most part in children and young adults, in which a diagnosis of meningeal hemorrhage was made. So few of the physicians with whom we have seen these cases have been familiar with the condition that it seems worth while to describe some of the more interesting cases in detail and to present certain data in regard to the others. These are listed in the accompanying table.

The early symptoms of the cases, especially when there was no underlying disease, were those of an acute, often of a fulminating, meningitis. The onset was sudden, with intense headache, usually vomiting, and not infrequently unconsciousness within a few hours. In some instances, there were twitchings or convulsions. Stiffness of the neck, a positive Kernig sign and various changes in the reflexes occurred from within a few hours to a day or two. In most instances, there was a moderate elevation of temperature from 1 to 3 degrees. The pulse was usually, but not invariably, slow, especially early in the case. Ehrenberg, followed by Leopold, divides the cases into two types, meningitic and apoplectic. This has seemed unnecessary, as merely emphasizing a greater or less severity of onset which might easily be further subdivided. It has not seemed to influence the outcome, as several patients with early unconsciousness have made complete and, in some instances, fairly rapid recoveries.

In this group of cases, none except those noted below have been included that showed spastic paralysis, as of course this would have led to the diagnosis of cerebral hemorrhage. In several instances there was a slight and transitory weakness of the muscles of the face or hand, probably due to pressure. Two cases with more marked paralysis came to necropsy and showed no evidence of cerebral hemorrhage.

Guillain [7] states that the symptoms are due both to pressure and to the toxic products of hemolysis. The diagnosis has been made chiefly by the spinal fluids, which have contained varying amounts of blood in the different cases. The blood at a given puncture has been evenly distributed through the fluid, as shown by collection in successive tubes, and it has not coagulated. When the lumbar puncture is done very soon after the onset of symptoms, the supernatant fluid, on centrifugalization, was nearly clear, or slightly reddish or yellowish. In later fluids, the supernatant liquid was yellow, the depth of color depending on the amount of the hemorrhage. The spinal fluids have been sterile on culture, except in three instances in which the meningeal hemorrhage accompanied an epidemic meningitis. In many instances, the Wassermann test has been done on the spinal fluid and has been negative except in Case 22 in the table. The cytologic and chemical examination have not been of much value in most of the cases on account of the blood.

The following case history is fairly typical:

CASE 11.—M. W., a girl, aged 12 years, whose past history was negative except for measles, was seen at midnight, Aug. 10, 1917. During the day, she had received a slight blow on the head while playing with her brother. She had been taken suddenly ill at 2 p. m. with severe headache and vomiting, and began having periods of delirium. At midnight, she was semistuporous; the pupils reacted sluggishly to light; the patellar reflexes, which had been exaggerated earlier, were nearly lost; there was stiffness of the neck and a positive Kernig sign; the temperature was normal, and the pulse 77 and slightly irregular. At lumbar puncture, 30 c.c. of uniformly bloody fluid was withdrawn, and since the picture so strongly suggested meningitis and since horse serum is indicated in hemorrhage, 20 c.c. of antimeningitis serum was given. On the following day, the condition was slightly improved. The patient was less stuporous and more rational. At lumbar puncture, 30 c.c. of somewhat less hemorrhagic fluid was withdrawn and 20 c.c. of serum again administered. On the 12th and 13th, no punctures were done, as the condition seemed to be improving. On the 13th she began to have a rather low, irregular fever. August 14, 30 c.c. of bloody fluid was withdrawn but no serum was given, as the cultures from the previous fluids were sterile. The Wassermann test on the spinal fluid was negative. On the 15th, another puncture was done, as the meningeal symptoms remained marked. The patient was sent to Bellevue Hospital, August 16, where she remained until the middle of October. The meningeal symptoms persisted for some time and necessitated repeated lumbar punctures, the earlier of which revealed hemorrhagic fluids. She complained of rather frequent headaches for some months after she left the hospital. When last seen, in the fall of 1924, seven years later, she showed no evidence of having suffered any ill effects from the meningeal hemorrhage.

A similar but much milder case is the following:

CASE 8.—G. K., a boy, aged 9 years, with no history of a previous illness, was taken suddenly ill at 2 a. m., April 29,

1. Leopold, Samuel: Spontaneous Subarachnoid Hemorrhage, J. A. M. A. **83**: 1362 (Oct. 17) 1914.
2. Neal, Josephine B.: Meningeal Hemorrhage, in Tice: Practice of Medicine, New York **10**: 243, 1920.
3. Dawson, D. L.: Wisconsin M. J. **22**: 426 (Feb.) 1924.
4. Ehrenberg: Hygiea, 1912, p. 848.
5. Forsheim, A.: Spontaneous Subarachnoidal Hemorrhages, Hygiea **84**: 1137, 1914.
6. These are as follows:
   Vigneras: Thèse de Paris, 1907-1908.
   Aubert: Thèse de Paris, 1911-1912.
   Hutinel, Klippel, et al: Maladies des méninges, Paris, 1912.
   Testas, A.: Contribution à l'étude de la puncture, etc., Bordeaux, 1915.
   Widal: Presse méd., 1903, p. 413.
   Babinski: Bull. et mém. Soc. méd. d. hôp. de Paris **3**: 370, 1912.
   Follet and Chevrel: Gaz. d. hôp. **83**: 547, 1910.
   Mauriac and Ferré: Jour. de méd. de Bordeaux **91**: 111 (March) 1920.
7. Guillain, G.: Presse méd. **26**: 449 (Sept. 5) 1918.

1918, with headache, vomiting, and occasional periods of delirium. When examined, May 3, he showed moderate stiffness of the neck, marked Kernig sign, absence of the patellar reflexes, and contracted pupils. He was no longer delirious but was slightly stuporous. His pulse was 86 and irregular. He had had a low irregular fever. At lumbar puncture, 15 c.c. of hemorrhagic fluid was obtained and an equal amount of meningitis serum given, for the reasons already stated. The culture from the fluid was sterile and the Wassermann reaction negative. The boy made a rapid and uneventful recovery, and more than six years later was reported to be entirely well.

The following case was seen at the Jamaica Hospital through the kindness of Dr. E. E. Keet:

CASE 18.—J. S., a youth, aged 19, had suffered from a severe electric shock a year previous to his illness and since that time had had frequent intense headaches, slight haziness of vision, twitching of the left hand, and slight left facial weakness. He was taken suddenly ill, Jan. 24, 1925, with headache, vomiting and early unconsciousness. He was seen, January 28. At this time there was moderate stiffness of the neck, and Kernig sign. There was no limitation of motion of the eyes, no ptosis and no strabismus. The pupils reacted normally to light and in accommodation, and the fundi were normal. There was some facial weakness, more marked on the right. The patellar reflexes were diminished; there was no ankle clonus or Babinski sign, though the latter had been present on admission. The abdominal reflexes responded irregularly at different examinations. There was a rather generalized muscular tremor at times. The patient was still semistuporous. His speech was somewhat blurred. He had been having an irregular fever, up to 102. His pulse had varied from 50 to 90 but was regular in rhythm. The systolic blood pressure was 130; diastolic, 70. The blood count showed a moderate leukocytosis, 16,000. There was incontinence of urine. The lumbar punctures had yielded uniformly blood tinged fluid. The Wassermann reaction on the spinal fluid was negative. The patient remained in the hospital for almost a month, gaining steadily. On leaving the hospital, there was some weakness of the left hand, but this disappeared in about a month. The diagnosis of epidemic encephalitis was considered in this case, but meningeal hemorrhage was favored on account of the suddenness and severity of the onset. Moreover, hemorrhagic fluids are rare in epidemic encephalitis.

The following case was seen at Bellevue Hospital through the courtesy of Dr. Charles E. Nammack:

CASE 25.—D. S., a woman, aged 24, with a history of good general health, was not subject to headache until the two weeks preceding the illness. When the illness began, Oct. 4, 1924, she had been riding in a taxicab and had struck her head against the side of the cab, but there was no contusion of the scalp, and the roentgenogram of the skull showed no evidence of fracture. She became suddenly ill with epistaxis, vomiting, headache and pain in the back of the neck, and speedily became unconscious. The patient was examined, October 7. At that time, she was still quite stuporous; there was moderate stiffness of the neck, and Kernig sign. The pupils were equal and reacted to light and in accommodation; there was bilateral ptosis and weakness of the left external rectus. The disks were choked. There was also slight facial weakness. The patellar reflex was increased on the left and diminished on the right. There was no ankle clonus. There was a positive Babinski sign on the left. There was no sensory disturbance. A low irregular fever ranged from 100 to 101. The pulse rate was from 60 to 70. The blood pressure was 120, systolic, and 80, diastolic. The blood count showed a low leukocytosis, 13,600; polymorphonuclears, 81 per cent. The urine was not abnormal. Chemical examination of the blood revealed: blood sugar, 140; nonprotein nitrogen, 34; sodium chlorid, 495. The blood and spinal fluid Wassermann reactions were negative. The spinal fluid was hemorrhagic. On account of the choking of the disks, a diagnosis of brain tumor had been considered. However, the choking of the disks disappeared on repeated lumbar puncture, as did also the weakness of the face and eye muscles. The patient left the hospital greatly improved, and subsequent examinations have shown her to be entirely well after several months.

CASE 10.—J. M., a girl, aged 12, seen, June 5, 1916, had had measles and scarlet fever some years before, and there was a history of an indefinite illness two months previously, with pain and swelling of the legs, and fever. She had been taken ill while at a dance late on the night of June 4 with headache and vomiting, followed very quickly by unconsciousness. June 5, she was semistuporous. There was stiffness of the neck and a positive Kernig sign. The patellar reflexes were absent; the pupils were unequal. The pulse was 84 and regular and the temperature, 100 F. At lumbar puncture, 35 c.c. of hemorrhagic fluid was obtained, and 20 c.c. of antimeningitis serum given. June 6, the patient was taken to Mount Sinai Hospital, where she died three days later.

Necropsy (by Dr. F. S. Mandelbaum).—The body was that of a poorly nourished young girl, showing marked rigor mortis and postmortem discoloration. There were no marks of injury on the body.

The skull was of normal thickness. The surface of the dura was normal in appearance. All the cranial blood sinuses were opened and found normal. Sphenoidal sinuses and both middle ears were opened and found normal. The internal surface of the dura was normal in appearance. The cerebrospinal fluid was normal in amount, and as it was mixed with blood from the necropsy, its characteristics could not be noted.

The brain was intensely congested and extremely bright red. Over its convexity were numerous small, bright red petechial hemorrhages. In the pia-arachnoid, at the base of the brain, especially over the pons, were great numbers of bright red, hemorrhagic areas from 2 to 6 mm. in size. The blood vessels were normal and contained fluid blood, but even the minute capillaries were congested and visible. Over the surface of the brain were two or three pale, miliary areas which had somewhat the appearance of tubercles. The brain was uniform in appearance and consistency. An attempt was made to aspirate the ventricles, but was unsuccessful. On section, the brain showed throughout the same extreme congestion noted on the surface; all the ventricles were normal, and the brain was otherwise normal.

Cultures from the brain showed *B. coli*. The smears were negative for tuberculosis. An inoculation, July 20, 1916, was negative for tuberculosis.

Smears with Gram's stain and diluted carbolfuchsin showed a moderate number of polymorphonuclears, but no organisms.

Microscopic examination of two sections of the cortex revealed a marked edema of the pia, and also a diffuse infiltration with red blood cells and few polymorphonuclears. There was a marked congestion of all the blood vessels of the pia and the brain. A moderate number of very small hemorrhages were found in the cortex. The hypophysis showed extreme congestion of the blood vessels and a small amount of colloid in some of the alveolar spaces in the pars intermedia and pars anterior. Acidophilic cells were very prominent and were present in great numbers; otherwise, the section was normal.

The Giemsa stain showed no bacteria.

In the cervical cord and pons, there was congestion of the blood vessels and the same type of inflammation of the pia-arachnoid as noted in the meninges of the cerebrum. No evidence of poliomyelitis was found. The diagnosis was acute encephalitis.

It will be noted that it was assumed at the necropsy that the blood in the spinal fluid was accidental. While a diagnosis of acute encephalitis was made, it is evident from a study of the report that the changes were more marked in the meninges than in the brain substance.

Cases 13, 26 and 28 were of interest:

CASE 13.—A girl, aged 15 years, gave a history of a similar illness nine years before, which had lasted about three weeks. She had another mild attack in 1915, and made an uneventful recovery. Two lumbar punctures were done, yielding 50 and 60 c.c., respectively, of slightly hemorrhagic fluid.

CASE 26.—A man, aged 27, gave a history of a previous illness, not so severe, four years previously. His attack in 1918 was a severe one, with unconsciousness at the onset. The fluid was hemorrhagic at several punctures. He made an apparently complete recovery but died in a similar attack some years later.

Data in Thirty-Five Cases of Meningeal Hemorrhage

No.	Year	Age	Sex*	Possible Cause	Outcome	Comment
1	1922	2 mo.	♀	Not determined	Died	
2	1917	5 mo.	♀	Epidemic meningitis	Died	
3	1918	9 mo.	♀	Not determined	Died	Liver enlarged; jaundice
4	1912	22 mo.	♂	Epidemic meningitis	Recovered	
5	1925	4 yr.	♀	Mitral lesion and Streptococcus viridans septicemia	Died	
6	1916	5 yr.	♀	Epidemic meningitis	Died	
7	1923	7½ yr.	♂	Hydrocephalus; mitral regurgitation	Died	
8	1918	9 yr.	♂	Not determined	Recovered	
9	1923	10 yr.	♀	Mitral stenosis	Recovered	
10	1916	12 yr.	♀	Not determined	Died	Necropsy finding reported
11	1917	12 yr.	♀	Not determined	Recovered	
12	1917	14 yr.	♂	Nephritis	Recovered	Died a month later with nephritis
13	1915	15 yr.	♀	Not determined	Recovered	History of similar illness 9 years before
14	1918	16 yr.	♂	Pneumonia	Recovered	
15	1919	17 yr.	♀	Not determined	Died	
16	1923	18 yr.	♂	Not determined	Died	Necropsy: pachymeningeal internal hemorrhage
17	1917	19 yr.	♀	Not determined	Recovered	
18	1925	19 yr.	♂	Not determined	Recovered	Severe electric shock year ago
19	1914	20 yr.	♂	Not determined	Died	
20	1924	20 yr.	♀	Not determined	Recovered	History of epidemic meningitis 10 years ago
21	1918	20 yr.	♀	Epidemic meningitis	Recovered	
22	1917	21 yr.	♂	Syphilis	Recovered	Sent to State Hospital
23	1915	22 yr.	♂	Blood pressure, 190 systolic	Died	No focal symptoms pointing to cerebral hemorrhage
24	1914	22 yr.	♀	Endocarditis	Died	
25	1924	24 yr.	♀	Struck head in taxicab, but no external mark	Recovered	
26	1918	27 yr.	♂	Not determined	Recovered	History of previous attack 4 years ago; died in similar attack some years later
27	1924	27 yr.	♂	Not determined	Recovered	
28	1915	30 yr.	♂	Not determined	Recovered	History of 2 previous attacks; mental deterioration after second and third
29	1917	34 yr.	♀	Not determined	Recovered	
30	1919	36 yr.	♂	Not determined	Recovered	
31	1925	36 yr.	♀	Not determined	Died	Necropsy showed hemorrhage in right ventricle
32	1920	40 yr.	♀	Not determined	Recovered	
33	1923	46 yr.	♂	Not determined	Recovered	
34	1923	48 yr.	♂	Not determined	Died	Necropsy showed hemorrhage in left ventricle and around circle of Willis
35	1923	50 yr.	♀	Not determined	Recovered	

* In this column, ♂ indicates male; ♀, female.

CASE 28.—A man, aged 30, seen in June, 1915, had had a similar attack eighteen years before, from which he had recovered completely, and a second, five years before, which was followed by some mental impairment. The attack in 1915 was only moderately severe, and he recovered so far as his physical condition was concerned, but the mental impairment had apparently increased.

While realizing that it is possible that these other attacks were different in origin, it seems reasonable to assume that they were of the same nature. If they were, the possibility suggests itself that they represented stages in the development of pachymeningitis interna hemorrhagica. It will be recalled that, on necropsy in this condition, there are often several layers in the false membrane beneath the dura, showing successive episodes in its formation.

It will be noted in the table that in four cases the meningeal hemorrhage accompanied an attack of epidemic meningitis; in four cases, a cardiac lesion; in one, pneumonia; in one, syphilis; in one, nephritis, and in one, high blood pressure. In the great majority of cases, however, no cause could be determined. Froin [8] gives a long list of conditions that may be the underlying causes of spontaneous meningeal hemorrhages. I stated in Tice's Practice of Medicine: "When we see so many conditions given as the cause of an occurrence, and when we remember that these conditions exist in the vast majority of cases without this occurrence taking place, it seems evident that the real cause must lie elsewhere, perhaps in some inherent weakness of the blood vessel in the individual cases in which meningeal hemorrhage occurs." Meylahn [9] concludes that spontaneous meningeal hemorrhage is nearly always a diapedesis. The causes of such an occurrence are disorders in the function of the vascular nerve apparatus. These vasomotor disturbances can be the result of diseases of the blood vessel walls. In that case, however, there must be assumed a previously existing constitutional weakness of the vascular nerves.

Weil, Isch-Wall and Pollet [10] call attention to the existence of blood lesions, analogous to those of hemorrhagic conditions, existing in certain patients with meningeal or cerebral hemorrhage. There is an increased bleeding time; coagulation is retarded, and the clot is less retractile and easily dissolves. The importance of this from a therapeutic standpoint is obvious.

The most important measure in treatment is lumbar puncture. Guillain warns against withdrawing too much fluid early in the illness. The lumbar puncture should be repeated daily, or less often, depending on the clinical symptoms. In most of our cases, it was followed by improvement. In many of our cases, horse serum, in the form of antimeningitis serum, was injected intraspinally early. This may have had a favorable influence on the hemorrhage. Certainly when the bleeding and coagulation time are increased, measures should be taken to correct these conditions of the blood.

It will be seen from a study of the table that twenty-one of our thirty-five patients recovered from the meningeal hemorrhage, although one died of nephritis a month later.

Meningeal hemorrhage is certainly a most interesting condition and one that warrants much further study.

8. Froin: Thèse de Paris, 1904-1905.
9. Meylahn: Deutsch. Ztschr. f. Nervenh. **78**: 78, 1923.
10. Weil, P. E., Isch-Wall and Pollet: Bull et mém. Soc. méd. d. hôp. de Paris **48**: 324 (May) 1924.

Research and Clinical Observation.—The very prevalent and unfortunate use of the word research as the equivalent of laboratory methods and laboratory results tends to belittle the importance of clinical observation, and is undoubtedly responsible for the general impression that when the young graduate commences general practice he relinquishes for good all opportunity of furthering the advance of medicine.—Bramwell, Edwin: *Lancet* **1**:268 (Feb. 7) 1925.

THE PRECIPITIN REACTION

IN THE DIAGNOSIS OF SCARLET FEVER AND ALLIED HEMOLYTIC STREPTOCOCCUS INFECTIONS *

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Important as previous studies on hemolytic streptococci as a cause of scarlet fever may be, especially immunologic studies, convincing proof of etiologic relationship of hemolytic streptococci to scarlet fever was lacking until the Dicks produced the disease in human volunteers with pure cultures of this organism.[1] They have also developed a presumptive susceptibility test by the intracutaneous injection of filtrates of cultures containing the specific toxin,[2] a method of active immunization [3] and of producing an antitoxic serum in the horse, and a procedure for identifying scarlet fever streptococci through the neutralization of toxin in vitro with the serum of convalescents from scarlet fever and experimentally produced antitoxic serum.[4]

Indeed, the problem of scarlet fever appears solved, yet the question of relationship of scarlatinal streptococci to other streptococci and the reason for the occurrence of epidemics remains unanswered. In epidemics of scarlet fever, as in other epidemic diseases due to streptococci, marked differences are noted, not only in general virulence but in the acquirement of particular infecting power by the streptococci, manifested, for example, by the high incidence of complications, such as otitis media, or nephritis in certain epidemics and not in others. Epidemics of what we now consider scarlet fever nearly always occur when hemolytic streptococcal infections of the throat and tonsil are prevalent, both in persons who have had scarlet fever and in those who have not. In fact, certain clinicians have come to regard many of these associated infections of the throat as scarlet fever without rash, because, aside from the rash, the symptoms, course and incidence of complications are so similar. My own studies in scarlet fever have been made chiefly from the standpoint of the more general problem of specificity (acquired or otherwise) of streptococci in the etiology of disease, and I have reported recently on the diagnostic value of a precipitin reaction between cleared suspensions in physiologic sodium chlorid solution of throat swabbings, and an immune scarlatinal horse serum prepared seven years before.[5] Moreover, through neutralization and absorption experiments, I have demonstrated the identity of the toxin (within the bacterial bodies and free in broth) produced by scarlatinal and by certain nonscarlatinal strains of hemolytic streptococci. This fact is believed to have important bearing on the genesis of scarlet fever, since it suggests that scarlatinal hemolytic streptococci are related to other hemolytic streptococci, and that specificity may be an acquired property, a phase perhaps in the life cycle of the streptococcus.[6]

I shall report here studies on the value of the precipitin reaction in the diagnosis of scarlet fever, on the virulence and toxin-producing power of hemolytic streptococci isolated from throats, infected wounds and dairy products during a recent epidemic of scarlet fever and allied throat infections, on the neutralization of toxin with scarlatinal immune serums, and on a comparative study of susceptibility to infection and sensitiveness of skin to toxin of hemolytic streptococci.

PRECIPITIN EXPERIMENTS

The immune scarlatinal serum, used in the experiments to be reported, was prepared in the horse (Horse 10) by repeated inoculation of hemolytic streptococci freshly isolated from the acutely inflamed throat in three typical cases of scarlet fever. The injections were made intravenously on three successive days each week from Dec. 19, 1917, to April 20, 1918. The initial injection consisted of the heated (56 C. for forty-five minutes) bacteria from 100 c.c. of glucose broth, suspended in 10 c.c. of sodium chlorid solution. The heat-killed organisms were injected during the first five weeks, and live bacteria during the remainder of the period of immunization. The dose was gradually increased until the organisms from 600 c.c. of broth were given at a single injection. The horse remained well until the latter part of March, when it developed arthritis which gradually increased until May 6, when it was bled to death under anesthesia. The serum used was obtained from this bleeding and from bleedings made April 8 and May 1. After the serum had been proved sterile, 0.2 per cent. tricresol was added, and the serum placed in amber bottles securely stoppered and kept continuously in the ice chest.

TECHNIC

I have found tubes similar to those used by Hektoen in his precipitin experiments very satisfactory in this study, as they were also in studies on poliomyelitis.[7] They are made from thin-walled glass tubing with an inside diameter of from 3 to 3.5 mm., cut into lengths of 3.5 cm., and sealed at one end. The capillary pipet used in adding the extract and serum is made from glass tubing of the same size, the capillary end being drawn to approximately 0.5 mm. outside diameter.

The swabs are made by wrapping absorbent cotton around the roughened end of a wire, preferably of aluminum, approximately 1.5 mm. in diameter, and bent to an angle of about 60 degrees. It is essential that the nasopharyngeal swabbing be obtained uncontaminated by contact with the tongue. The swab immediately or after it is kept in an empty sterile test tube and allowed to dry is placed in 2 c.c. of sodium chlorid solution or 0.2 per cent. gelatin Locke solution, and thoroughly agitated. The cotton is then removed from the wire with forceps, and as much as possible of the absorbed fluid is expressed by wrapping the cotton around the end of the forceps while pressing it against the mouth of the tube. The mixture is cleared by placing it in narrow centrifuge tubes, and centrifugalizing it at high speed.

The cleared supernatant fluid is then placed in the precipitin tubes with a capillary pipet, the end being placed in the bottom of the precipitin tube and enough of the fluid allowed to flow in to form a column about 1 cm. in height in the tube. An equal amount of serum is then added, the pipet again being plunged to the bottom of the tube, so that the serum lies beneath the extract. A single pipet is used for adding both extract and serum; it is rinsed three times with sterile solution

* From the Division of Experimental Bacteriology, Institute of Experimental Medicine, the Mayo Foundation.

1. Dick, G. F., and Dick, Gladys H.: Experimental Scarlet Fever, J. A. M. A. **81**: 1166-1167 (Oct. 6) 1923.
2. Dick, G. F., and Dick, Gladys H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. **82**: 265-266 (Jan. 26) 1924.
3. Dick, G. F., and Dick, Gladys H.: Scarlet Fever Toxin in Preventive Immunization, J. A. M. A. **82**: 544-545 (Feb. 16) 1924.
4. Dick, G. F., and Dick, Gladys H.: A Method of Recognizing Scarlet Fever Streptococci by Means of Specific Toxin Production, J. A. M. A. **84**: 802-803 (March 14) 1925.
5. Rosenow, E. C.: A Precipitating and Neutralizing Antistreptococcus (Scarlatinal) Horse Serum, Proc. Soc. Exper. Biol. & Med. **22**: 189, 1925.
6. Rosenow, E. C.: Precipitating and Neutralizing Scarlatinal Antistreptococcus Horse Serum, J. Infect. Dis., to be published.
7. Rosenow, E. C.: A Specific Precipitin Reaction in Epidemic Poliomyelitis, J. A. M. A. **84**: 429-432 (Feb. 7) 1925.

of sodium chlorid between each different transference of extract and serum. The use of the capillary pipet is essential, as it secures a relatively slow rate of flow which can be controlled readily, and because a large pipet causes too much mixing of extract and serum at the zone of contact. It is, of course, essential that the extracts and serum be water-clear, or only slightly opalescent to transmitted light.

The tubes are incubated for two hours, when a reading is taken. They are then placed in the refrigerator over night, after which a second reading is made. The two readings usually agree. Proper illumination in making the readings is essential, and is best accomplished in a darkened room by transmitted light from below the shade of a strong electric light (a frosted bulb of from 75 to 100 watts), the eye being directed toward a dark background. The absence of a cloud at the zone of contact is recorded as a negative reaction, a slight cloud as +, a moderately heavy cloud as + +, a heavy, slightly granular cloud as + + +, and a heavy cloud with precipitation as + + + +. It is seldom that a stronger reaction than + + is obtained with nasopharyngeal extracts.

The epidemic studied occurred between Feb. 12 and May 12, 1925. Precipitin tests were made in twenty-nine patients in whom hemolytic streptococcus infection was demonstrated and in fifty-two normal controls, chiefly nurses. Seventeen of the patients developed their infection in the Kahler Hospital. One of these was a case of hematuria; the others were cases of exophthalmic goiter. One case occurred in each of three other hospitals in otherwise normal adults, the others chiefly in children in homes in different parts of Rochester. Fourteen of the twenty-nine patients manifested a scarlatinal rash and desquamation and were undoubted cases of scarlet fever, while ten showed no rash or slight erythema, so that diagnosis on clinical grounds was uncertain. Precipitin tests with the scarlatinal serum (Horse 10) at the onset were positive, and throat and tonsillar cultures revealed countless numbers of hemolytic streptococci in each of the fourteen patients with undoubted scarlet fever.

Repeated precipitin tests and cultures of nasopharyngeal swabbings were made at intervals throughout the course of the disease in seven cases. In one of these, hemolytic streptococci were isolated in large numbers and the precipitin test remained positive in each of five tests made over a period of ten days. In the other six cases, the precipitin test became negative in one or two weeks, as inflammatory reaction of the throat subsided. This was true even when cultures continued to yield large numbers of hemolytic streptococci. In three cases, the precipitin test became positive with the nonscarlatinal antihemolytic streptococcus serum as it became negative with the antiscarlatinal serum. In two patients whose cultures continued to show large numbers of hemolytic streptococci and who developed exacerbations associated with fever and glandular enlargement, the precipitin tests were positive with the antiscarlatinal serum at the onset, negative during the quiescent interval of eight and ten days, respectively, again positive during the period of exacerbation, and again negative during convalescence. In two cases of scarlet fever, the precipitin tests proved negative at the outset but positive a few days later as the throat infection became more marked, cultures in each instance showing large numbers of hemolytic streptococci. In none of the fourteen cases was there a history of a previous attack of scarlet fever.

The Dick test was mildly or strongly positive at the time of the rash and negative during convalescence in each of six cases studied. One of these was a case of surgical scarlet fever in a youth, aged 15 years, who had been operated on several weeks before for empyema of long standing. Resections of ribs had left a large granulating, gaping wound. About one week before the tests were made he had a chill with malaise and high fever, but without sore throat; two days later a scarlatinal rash appeared, and still later, typical desquamation. The throat appeared normal, but the dressings of the thoracotomy wound were saturated with pus, the granulating surface was covered with thin grayish exudate, and the surrounding skin presented a large number of pustules. Precipitin tests were made of the cleared suspensions in sodium chlorid solution of the swabbing from nasopharynx, granulating wound, and pustules. Cultures of the nasopharynx proved free from hemolytic streptococci; those from the wound revealed countless numbers of typical colonies of this organism together with a moderate number of staphylococci, while those from the pustule revealed *Staphylococcus albus* only. The precipitin test with the material swabbed from the throat and pustule was negative, while that from the wound proved strongly positive. Skin tests with the filtrate of this hemolytic streptococcus proved positive in each of two susceptible persons. The serum obtained two weeks after the onset of the attack was found to neutralize the toxin in filtrates of known scarlatinal hemolytic streptococci.

Of the fifteen patients for whom the diagnosis of scarlet fever on clinical findings was uncertain, nine had typical attacks of follicular tonsillitis, with relatively slight affection of the throat and glands and little fever. Five had a more diffuse and more severe infection of the throat, associated with fever, lasting from two to seven days, while in one, a young lad, cellulitis followed injury of the skin over his knee at a time when his sister had scarlet fever. A culture of his throat was free from hemolytic streptococci and the precipitin test was negative, while that from the pus from the knee revealed countless numbers of colonies and gave a positive precipitin test. The precipitin test with the antiscarlatinal serum in the nine cases of mild throat infection proved negative, and hence these were not considered cases of scarlet fever. The Dick test was negative in two and positive in two. In the five cases of angina resembling that of scarlet fever, the precipitin test proved positive in all at the onset, and became negative in all during convalescence. The negative tests here, as during convalescence in the undoubted cases of scarlet fever, became negative before the hemolytic streptococci disappeared from the throat. Two of the five patients had had scarlet fever. The Dick test in both of these as in the other three was negative. The serum during convalescence of the two that had not had scarlet fever previously neutralized the toxin produced by streptococci from typical scarlet fever.

One of these cases was that of a man, aged 46, who was being treated for exophthalmic goiter. The attack began with severe aching and malaise, occipital headache, delirium, and great pain in the throat on swallowing. The patient was critically ill for a week, with high fever and enlargement of cervical glands, and then gradually recovered. Examination of the throat on the second day revealed marked swelling and redness of the tonsils, which were partly covered with a loosely adherent membrane, and extreme redness and edema of the uvula, pillars and pharynx. The tongue was heavily coated; the papillae were red and swollen. The swabs

from the tonsils and nasopharynx, February 19 to 20, yielded countless numbers of colonies of hemolytic streptococci and a positive precipitin reaction with my old scarlatinal immune horse serum. The swabs taken February 25 and 26 also yielded countless numbers of hemolytic streptococci, but the precipitin tests were negative. The swabs taken March 4 were found free from hemolytic streptococci, and the precipitin tests were negative. The Dick test at the onset of the attack proved negative. No rash developed; desquamation was not observed. The patient had had scarlet fever during childhood.

The findings in one family are of particular interest. The nursemaid had severe tonsillitis associated with fever and illness, compelling her to stop her work and go home. She did not consult a physician. Thereupon her sister, who remained free from throat symptoms, substituted. About a week after the maid had fallen ill with tonsillitis, one of the children, a girl of 8, became ill with a typical attack of scarlet fever and a severe infection of the finger at the site of an accidental burn. Her brother had a streptococcus infection of the injured skin over the knee. The cultures from the tonsil of the maid who had had tonsillitis two weeks before, from the throat and infected finger of the girl and from the infected knee of the boy, revealed large numbers of hemolytic streptococci, and the precipitin tests were positive; whereas both cultures and precipitin tests were negative with swabs from the throat of the unaffected sister of the nursemaid, and the boy with the infected knee.

In no instance was a positive precipitin test obtained with the antiscarlatinal serum in which cultures did not show large numbers of hemolytic streptococci. The results in tonsillar and nasopharyngeal swabs made at the same time in six cases were the same in five and slightly different in two. In most cases, as typical hemolytic streptococci disappeared, a preponderance of slightly hemolytic streptococci supervened. The precipitin test in these with the antiscarlatinal serum was negative in every instance.

TABLE 1.—*Precipitin Reaction in Scarlet Fever, Follicular Tonsillitis, Diseases of the Nervous System and Normal Controls*

Source of Naso-pharyngeal Swabs	Cases	Tests	Immune Serums, Incidence of Positive Reactions: Poliomyelitis, 39	Encephalitis, 8	Chorea, 25	Nonscarlatinal Anti-hemolytic Strepto-coccus, 19	Scarlatinal Anti-hemolytic Strepto-coccus, 30	Normal Horse
Scarlet fever	20	57	0	0	0	5	52 (91%)	0
Follicular tonsillitis	9	16	0	0	0	4	1 (6%)	0
Diseases of the nervous system	49	71	40	39	23	3	3 (3%)	0
Normal controls	109	119	5	8	4	2	2 (2%)	0

Of fifty-seven tests made early in cases of scarlet fever, with swabbings from the nasopharynx, ear or wound and with various immune serums (Table 1), negative results were obtained in all instances when the immune horse serums (prepared by injecting streptococci from poliomyelitis, encephalitis and chorea) and normal horse serums were used; five proved positive in the nonscarlatinal hemolytic streptococcus serum; while, with the scarlatinal antihemolytic streptococcus serum, a positive test was obtained in fifty-two instances (91 per cent.). Cultures showed the presence of hemolytic streptococci in each of the five negative tests, but the suspension was so turbid after centrifugalization, on account of material having been accidentally swabbed from the coated tongue, that a slight cloud may have been masked. In control experiments with several samples of scarlatinal antitoxic serums prepared by the Dick and Dochez methods, positive reactions were obtained only about one half as often as with my serum which was prepared by injecting dead bacteria and living cultures intravenously.

The tests in follicular hemolytic streptococcus tonsillitis indicate that the hemolytic streptococcus in this disease varies immunologically, although culturally indistinguishable, the test being positive three times out of ten with the nonscarlatinal antihemolytic streptococcus serum and only once with the scarlatinal antihemolytic streptococcus serum. The results in forty-nine cases of diseases of the nervous system such as epidemic encephalitis, chorea and spasmodic torticollis unassociated with hemolytic streptococcus infection, and in 107 normal persons, are self explanatory and serve as good controls over the results obtained in the cases of scarlet fever.

Precipitin tests and blood agar plate cultures were made also in nine cases of acute or subacute otitis media, following tonsillitis or scarlet fever, and in three cases of mastoiditis. The duration of the suppurative process ranged from one week to six weeks. The fresh exudate was obtained with swabs of absorbent cotton, and was then suspended in 2 c.c. of sodium chlorid solution and the cleared extract layered over the respective serums in the usual manner. Hemolytic streptococci were found present in variable numbers in all but two of the cases of otitis media and one of the cases of mastoiditis. Of the seven cases of otitis media which were shown to contain hemolytic streptococci in the swabbed material, two gave a positive ring test with the antiscarlatinal serum. One of the patients in the latter group had had scarlet fever several weeks previously; the other had not. The two cases of otitis media that reacted positively showed countless numbers of hemolytic streptococci, and the ear drums had been punctured ten days and two weeks previously, respectively. Neither of the patients had a rash, but both had severe infections of the throat. One was exposed to scarlet fever. In one of the negative cases of otitis media the patient had had scarlet fever two weeks previously, and the negative precipitin test was no doubt due to the fact that only relatively few hemolytic streptococci were present in the material swabbed. Two of the remaining five negative cases in which there were many hemolytic streptococci gave a positive precipitin reaction with nonscarlatinal antihemolytic streptococcus serum. Both of the cases of mastoiditis, in which there were many hemolytic streptococci, give a positive precipitin test with the antiscarlatinal serum. In one, the mastoiditis followed scarlet fever; in the other, there was a scarlatinal type of infection of the throat, but no rash.

VIRULENCE AND TOXIN PRODUCTION

In order to eliminate the difficulty in filtering the blood broth cultures used by the Dicks, and to avoid pseudoreactions due to foreign protein, I used for the most part the Douglas medium or tryptic digest horse muscle broth found so useful by Hartley [8] in the production of diphtheria toxin. The conditions were made as nearly alike as possible throughout the study. Growth

8. Hartley, P.: The Value of Douglas' Medium for the Production of Diphtheria Toxin, J. Path. & Bacteriol. **25**:479-486 (Oct.) 1922.

in this medium is more rapid and more profuse than in ordinary broth containing a small amount of blood. Pure cultures from blood agar plates were inoculated in the previously warmed broth. All cultures were incubated for forty-eight hours at 37 C., when 0.2 per cent. phenol (carbolic acid) was added; they were then passed through bacterial filters. The filtrates were diluted with physiologic sodium chlorid solution on the day the injections were made. The thirty-seven filtrates tested represent thirty-two different strains of hemolytic streptococci and one strain of green-producing streptococci. Of the thirty-six prepared from cultures of hemolytic streptococcus, eight were obtained from seven cases of scarlet fever with rash, three from two cases of scarlet fever without rash, two from two cases of hemolytic streptococcal follicular tonsillitis, six from six normal controls, one from the wound of an infected knee, one from the throat in a case of acute chorea, and fifteen from dairy products. The toxin content of the thirty-seven filtrates was tested in two sets of experiments comprising six normal adult persons, and two young Chester-White pigs weighing 7 kg. each. The filtrates injected in man were diluted 1 : 500, those for the pig, 1 : 50. The injections of 0.1 c.c. into the skin were made as nearly alike as possible in all instances: over the forearm in man, and over the abdomen and thorax in pigs. The readings were taken at the time of maximal reaction; namely, twenty-four hours after injection in man, and eight hours in pigs.

Extreme variations were noted in the susceptibility of the skin of different persons. Thus, a man who had what was considered to be psoriasis was immune to all of eighteen filtrates injected, and a man of asthenic type reacted to only two of nineteen. Three were moderately susceptible, reacting each with ten filtrates, while one, a robust, muscular man, was highly susceptible, reacting more or less markedly to sixteen of the nineteen filtrates injected. The pigs were about equally susceptible. Marked differences were noted in reactivity to filtrates from different strains. The filtrates representing scarlatinal strains were most uniformly of high toxicity, although two exceptions were noted in four of the six persons and in one of the pigs. Marked differences were noted in the toxicity of filtrates produced by the same strain. In one instance the strain isolated from the throat at the height of the attack, when the precipitin test was positive, produced a toxin highly irritating to the skin of two of three men injected, whereas the toxin produced by this strain later, after the precipitin test had become negative, produced no reaction in these, but a marked reaction in another person. In another instance, the strain of hemolytic streptococcus isolated from cottage cheese failed to produce toxin when isolated but acquired this power after passage through animals.

Of eight strains isolated in scarlet fever with rash, four produced filtrates of high and four of moderate toxicity. Of three strains isolated in cases considered to be scarlet fever without rash, two producted filtrates of high and one of moderate toxicity. Of two strains isolated in follicular tonsillitis, one produced a filtrate of high and one of moderate toxicity. Of six strains of hemolytic streptococci isolated from the throats of six of fifty-two nurses (from the hospital in which the hemolytic streptococcal infections occurred), two produced filtrates of high, three of moderate, and one of no toxicity. Of the fifteen strains isolated from dairy products used in the hospital, seven produced filtrates of moderate or slight toxicity and eight of no toxicity. One strain isolated from the infected knee and one from the throat of a child with acute chorea produced filtrates of moderate toxicity. The toxicity of four filtrates was tested by injecting each into four nurses. Two of the filtrates were prepared from undoubted scarlet fever strains, one (homologous) from the hemolytic streptococcal infection of the nurse to be injected, and the fourth from a strain isolated in a sterile manner from the udder of a cow. The control injected consisted of diluted broth. Three of the nurses, according to toxicity tests, were carriers of scarlatinal hemolytic streptococcus, and one was a carrier of a nonhemolytic streptococcus. All had had attacks of sore throat from ten days to two weeks previously. Two had had scarlet fever and two had not. In three, the two that had not had scarlet fever and one that had had the disease, the reactions were all negative; while the second of those that had had scarlet fever reacted markedly to all but the filtrates prepared from the culture of hemolytic streptococci from the milk. Inflammatory reaction was absent in the throats of the controls at the times skin tests were made, as well as when the cultures were taken. The number of colonies of hemolytic streptococci was relatively small, and the precipitin test with scarlatinal serum was accordingly negative.

The virulence or infecting power of the streptococci used for toxin production was tested in twenty-nine instances. Rabbits were given intracutaneous injections of 0.2 c.c. of the twenty-four hour cultures; mice were given 1.5 c.c. intraperitoneally and 0.5 c.c. subcutaneously and white rats were given 4.5 c.c. intraperitoneally and 0.5 c.c. subcutaneously. The remainder of the culture was then incubated for twenty-four hours longer before being filtered. The virulence was considered marked if the skin of the rabbit showed marked reaction, and the mouse and rat died within forty-eight hours after injection; moderate if the skin reaction was of lesser extent and if either the mouse or rat survived or if they died late, and of slight or no virulence if only slight or no reaction developed in the skin of the rabbit and if the mouse and rat remained well. The virulence of nineteen strains was marked, of four moderate and of two slight, while four showed no virulence. Of the twenty-five strains that showed a certain degree of virulence, twenty produced a large or moderate amount of toxin and five a slight amount or no toxin. Three of the four strains that proved nonvirulent produced a moderate amount of toxin, while one produced none.

A comparison of the significance of the precipitin test and the toxin producing power was made in fifteen cases. In each of nine cases in which the precipitin test was positive, production of toxin by the corresponding strain was high. Five of these were cases of scarlet fever with rash, and four were cases of scarlet fever without rash. In four others with a positive precipitin test, the production of toxin was moderate or slight. Two of these were mild cases of scarlet fever with rash, one a case of surgical scarlet fever and one a case of acute chorea. In each of these cases in which the precipitin test was negative, toxin production was moderate or slight. In one case of scarlet fever without rash the production of toxin was high at the onset when the precipitin test was positive, and low during convalescence when the precipitin test had become negative.

NEUTRALIZATION EXPERIMENTS

The filtrates used in the experiment summarized in Table 2 were diluted with physiologic sodium chlorid solution to 1 : 250 for man and 1 : 50 for pigs. They were mixed with equal parts of the different serums,

and the mixture was incubated for one hour before injection. Neutralization was practically complete by each of the serums for man and pigs.

TABLE 2.—*Neutralization of Toxin with Scarlatinal Immune Horse Serums and Convalescent Scarlet Fever Serum*

	Filtrate*	Serums†			
		Scarlatinal Antihemolytic Streptococcus		Convalescent Scarlet Fever Reaction	Normal Horse Reaction
		Rosenow Reaction	Dochez Reaction		
Case 1	1	0	+	+	++++
	2	0	+	+	+++
	3	0	0	0	+†
	4	0	0	0	+++
	5	0	0	0	++
	6	0	0	0	0
Case 2	1	0	0	0	++++
	2	0	0	0	+++
	3	0	0	0	+++
	4	0	0	0	+++
	5	0	0	0	+++
	6	0	0	0	+
Case 3	1	0	+	0	++
	2	0	+	0	++
	3	0	+	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0
Case 4	1	0	+	0	+++
	2	0	+	0	+++
	3	0	+	+	+++
	4	0	0	0	+++
	5	0	0	0	++
	6	0	0	0	0
Pig 1	1	0	0	0	++
	2	0	0	0	++
	3	0	0	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0
Pig 2	1	0	0	0	++
	2	0	0	0	++
	3	0	0	0	++
	4	0	0	0	++
	5	0	0	0	0
	6	0	0	0	0

* Source of hemolytic streptococcus from which filtrate was prepared:
1. Throat, scarlet fever without rash, height of attack (Strain 267).
2. Throat, same case during convalescence.
3. Throat, scarlet fever with rash, height of attack (Strain 281).
4. Throat, normal control (Strain 341).
5. Milk obtained in sterile manner from cow (Strain 304).
6. Control, diluted broth.

† The degree of reaction is estimated on a basis of 0 to ++++.

SUMMARY AND COMMENT

Hemolytic streptococci of scarlatinal type, as determined by the precipitin reaction, were demonstrated in the throat during the onset in fourteen cases of scarlet fever with rash and five cases of scarlet fever without rash; and hemolytic streptococci of nonscarlatinal type were demonstrated in most of these during convalescence and also throughout the attack in three cases of acute follicular tonsillitis. Moreover, according to this test, scarlatinal hemolytic streptococci were demonstrated in the tonsil of an adult who had had tonsillitis two weeks previously, in the throat and pus from an infected finger in a case of scarlet fever, and in the pus of an infected knee of a boy who did not have a rash, in the empyema pus in a case of typical surgical scarlet fever, and in cases of otitis media and mastoiditis. Virulence and the production of toxin were usually high in strains isolated from material that gave a positive precipitin reaction, and vice versa. The clinical findings in the throat and elsewhere in cases in which there was no rash, and in which the precipitin test was positive, were like those of scarlet fever, and in one of these, precipitin, toxin production and neutralization tests were all positive. Hence the precipitin reaction with suitable scarlatinal immune serums may be considered of value in determining the presence or absence of scarlatinal hemolytic streptococci in the throats and elsewhere, not only in scarlet fever but in other infections. Since the test is easily made and the results are obtainable quickly, and since it is positive at the very outset of the infection, it should prove of great value in determining the nature of the infection in the throat, ear and mastoid at the time of epidemics of scarlet fever, especially in persons who have had scarlet fever or who have presumably been rendered immune by the Dick method of injection of toxin. A positive precipitin reaction at the outset in cases of infection of the throat, suggestive of scarlet fever, whether the Dick test is positive or negative, and irrespective of any history of scarlet fever or prophylactic inoculations, should, in the light of these results, be considered tentatively to indicate scarlet fever and should lead to the institution of immediate precautionary measures and perhaps specific serum treatment. Since the precipitin test tends to become negative during convalescence before hemolytic streptococci have disappeared, the fact that not all strains of hemolytic streptococci from scarlet fever can be placed in one group by agglutination and agglutinin absorption tests does not necessarily militate against the specificity of the precipitin test, because it is performed with swabbings directly from the infected tissues, whereas the agglutinin tests have been made without much regard to the time in the attack at which they were isolated, or to the duration and character of artificial cultivation.

In view of the general agreement found between precipitin reaction tests for virulence and the production of toxin in the medium used, and the fact that neutralization of toxin was so marked both by the hyperimmune horse serum and convalescent scarlet fever serum, there is no good reason for believing that the use of the blood broth mediums, as recommended by the Dicks, would have given materially different results.

The Dick test was found to be a reliable index of susceptibility of the skin to rash. It was positive at the time of the attack and negative during convalescence in each case tested, but according to my experiments, immunity of the skin to rash and to injections of the specific toxin does not always run parallel to immunity of the throat, and so forth, to infection by scarlatinal hemolytic streptococci. Thus, five persons developed severe infection of the throat resembling that of scarlet fever, due, according to the precipitin test, to scarlatinal hemolytic streptococci, despite the fact that the Dick test was negative and rash remained absent. Two of these patients had had scarlet fever. The strain from one of the patients who had had scarlet fever was proved to be a scarlatinal hemolytic streptococcus by the precipitin test and by the Dick test; namely, production of toxin and neutralization of toxin by immune scarlatinal serum and convalescent scarlet fever serum. The serum of one of these patients obtained during convalescence had marked neutralizing power over scarlatinal toxin. On the basis of the results of these experiments it would appear that the supposed immunity to scarlet fever following an attack, and therefore perhaps following prophylactic inoculation, may mean chiefly immunity of skin and perhaps other tissues to toxin and not immunity of the throat and certain other structures to infection by true scarlatinal hemolytic streptococci. The occurrence of high fever, sore throat and otitis media without rash in the children of one family within a month following typical attacks of scarlet fever, which, according to the toxicity and neutralization test, was due to scarlatinal hemolytic streptococci in each case,[6] also supports this view. It is

possible, of course, that a relative immunity to infection develops, which, however, may not be readily detectable clinically.

According to toxin production, scarlatinal hemolytic streptococci were isolated from dairy products, before pasteurization, used in the hospital where scarlet fever occurred, in seven instances. One of these strains, isolated in a sterile manner from the udder of a cow, was found virulent to rabbit, mouse and rat, and produced a moderate amount of toxin which was neutralized by scarlatinal immune horse serums and convalescent scarlet fever serum. The strains of hemolytic streptococci from patients with scarlet fever, and from the throats of nurses in more or less intimate contact with the disease, as well as those from allied infections, were found, with few exceptions, to be more virulent and better toxin producers than the strains isolated from dairy products.

These facts and the proof of identity of toxin produced by strains isolated from scarlet fever, and certain ones isolated from other sources, indicate strongly that specificity in scarlatinal hemolytic streptococci may be an acquired and temporary property.

SURGERY OF THE SUPRA-ORBITAL REGION *

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Most of the commoner disorders in the supra-orbital region arise from the eye or the frontal sinus and are handled by the specialists in these branches, so they will not be considered here. But there are many injuries and new growths that require in their treatment an intimate knowledge of the unusual anatomic features in this vicinity. Here we have, in close proximity, an important organ of special sense, the eye; a cavity lined by mucous membrane, the frontal sinus, and the brain, enclosed in its bony walls covered with modified skin and fascia.

ANATOMY

The foundation on which the tissues rest is the frontal bone. The supra-orbital margin forms the upper boundary of the orbit, and above it is the superciliary ridge, a dense bony structure protecting both the eye and the brain. The prominence of the ridge is frequently, though not always, in direct relation to the size of the sinus. The frontal sinus varies greatly both in size and in position. Its anterior wall is of cancellated bone, while the posterior wall is usually thinner but of more compact bone. It is lined with mucous membrane and communicates with the nose so that injuries involving the sinus are likely to be infected by bacteria from within as well as by the ordinary skin bacteria.

The frontal bone is covered with pericranium, subaponeurotic connective tissue, frontalis muscle and its fascia, superficial fascia and skin. Infection in the subaponeurotic connective tissue may be serious, but free drainage is easily established in this region. The frontalis fascia, superficial fascia, and skin are fused here and, as a result, suppuration in these areas does not tend to spread and wounds do not gape. Because of the rich blood supply, there is little danger of sloughing of injured tissues or skin flaps. Hemorrhage is likely to be profuse and persistent because the vessel walls cannot retract or contract. The important muscles are the frontalis, orbicularis oculi and corrugator supercilii, all of which are supplied by branches of the facial nerve. The blood supply is from the frontal branch of the superficial temporal artery, the angular branch of the external maxillary and the supra-orbital branch of the ophthalmic. This is important, for any of these may require ligation proximal to a wound. The veins are the supra-orbital, superior palpebral and anterior facial. The sensory nerves are the supra-orbital and supratrochlear branches of the fifth nerve. They are conveniently located for blocking by a local anesthetic or for alcohol injection to relieve chronic pain following the use of irradiation for malignancy. The lymphatics of the inner half drain into the submaxillary glands and those of the outer half into the glands in the parotid region, thence to those under the angle of the jaw; so infection here may produce edema over the bridge of the nose and in the parotid region, resembling mumps, with enlargement of the glands beneath the angle of the jaw.

The superficial fascia, which is very dense, contains little fat, so lipomas are rare. The fascial layers are thickened at the eyebrow. The outer end of the eyebrow is said to be a favorite situation for small dermoids, the result of inclusion of skin cells beneath the surface during closure of the orbitonasal fissure. These do not involve the skin, are beneath the fascia and may indent the bone. They do not move with the skin as do wens and other cysts.

INJURIES

Injuries may involve the soft tissues only or the bone and sinus as well. Blows over the sharp supra-orbital ridge may produce injuries resembling incised wounds. Injuries to the eyelids or eyebrows require careful attention because the resulting deformity may be very conspicuous, especially if there is interference with muscular action. General surgical principles apply, with certain modifications. If only the soft tissues are involved, all foreign matter and tissue that is hopelessly damaged are removed. The rich blood supply is favorable to damaged tissues, so it is best to be conservative. Strong antiseptics are seldom required and should be used with caution. All viable tissues are replaced as near their normal position as possible, but it should be remembered that the loose subcutaneous tissue of the eyelids allows great swelling and may increase the tension if sutures are placed too early. Plenty of drainage should be provided for the first twenty-four or forty-eight hours. Great care must be taken to locate and

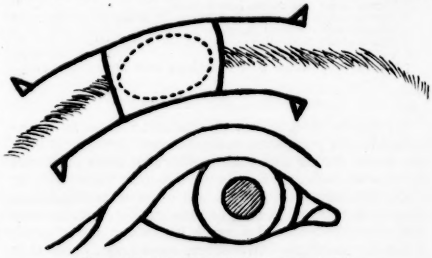

Fig. 1 (Case 1).—Incisions for removal of mole.

* Read before the Section on Stomatology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

replace detached muscles of the orbit or lids and to match accurately the margins of the eyebrows.

Wounds involving the bone are often complicated by injuries to the eyeball or brain. If the anterior wall of the frontal sinus is fractured, emphysema and deep suppuration may be annoying sequels. Fragments of bone that are still attached to the pericranium should be replaced and will probably live. It may be advisable to enlarge the opening into the nose for better drainage, especially if the nasal bone is also fractured. Fracture

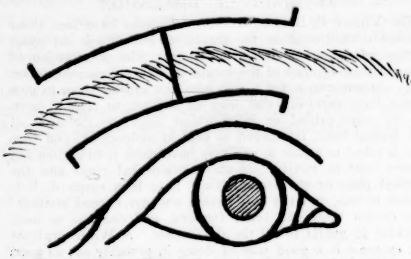

Fig. 2 (Case 1).—Method of suturing after removal of mole.

of the bony wall of the orbit or detachment of the muscles may allow a surprising degree of displacement of the eyeball, and make it very difficult to find the usual landmarks. In such cases, early and accurate replacement of the fragments is necessary and difficult. Fractures of the anterior fossa of the skull may show late subconjunctival hemorrhage, ecchymosis or edema of the eyelids or the bridge of the nose. Gunshot wounds of this region are not uncommon, and they present many difficult problems, especially concerning the time and extent of operation. Penetrating bullet wounds eventually require operation in nearly every case, to remove fragments of bone, bullets or other foreign bodies. Immediate operation and search for foreign bodies are seldom indicated. These wounds, if involving only the frontal lobe of the brain, usually do not produce important focal signs, but pressure of extravasated blood or brain abscess may later do so.

Gunshot w unds of the orbital wall may involve the eye and require enucleation. It is usually safe to wait several days before removing the eye and repairing the injury to the bony wall; but, if the bullet has remained in the orbit, it is better to remove the missile and the eye, if necessary, at once. Careful débridement and free drainage will shorten the time of healing and frequently obviate secondary repair.

COSMETIC SURGERY

We are occasionally called on to correct deformities or to remove scars or new growths in this region which do not interfere with function but are conspicuous because of their prominent location. Any irregularity of the eyebrow is very noticeable. Loss of a part or the whole of the eyebrow may be improved by tattooing or by wearing an artificial hairy patch, but these are poor makeshifts and usually unsatisfactory. If the defect is large, it is best repaired by hair-growing skin in the shape of a pedicled flap or Wolfe graft from the scalp, care being taken to have the hairs grow in the proper direction in their new location. When removing scars or growths, it is better to use a full-thickness skin graft than to close the flaps under too much tension. The grafts do very well here because of the rich blood supply. If tension and stretching are unavoidable, it is better to have the tension in a horizontal direction, since this does not raise the eyebrow or smooth the wrinkles of the forehead, both of which are very noticeable. A shortening of the eyebrow is much less conspicuous than narrowing or a change of elevation.

New growths in this area are common, especially in the outer third of the eyebrow. Because they are conspicuous, they usually come to operation early. Most of them are easily removed, under local anesthesia, through an incision within the limits of the eyebrow. Small dermoids may occur beneath the deep fascia; wens and other cysts are common. I have seen a number of large, hairy pigmented moles in the outer third of the eyebrow, and their removal may require the cutting of quite extensive skin flaps. Flaps from the forehead are frequently used in rhinoplasties and other replacements, but the scars are quite conspicuous and skin should not be taken from this region except to correct a disfigurement more noticeable than that which will be produced by the resulting scar.

When large defects of the bone are to be replaced, it is best to use bone, cartilage, fascia or fat from the patient himself whenever possible. Depressed fractures of the anterior wall of the frontal sinus are very satisfactorily corrected by fat grafts. Extensive cranioplasties are seldom required in this region. When the injury involves the sinus, the posterior wall is seldom fractured, and when the time comes for repair, it is usually found that the sinus is closed off from its normal communication with the nose, which makes the problem of repair easier.

It is a common observation that similar cases tend to appear in groups, and so it was my experience to have, within a short time, a number of patients with lesions above the eye. The cases reported here illustrate some of the common conditions and the methods that have been found satisfactory in treating them.

Fig. 3 (Case 2).—Adherent scar and depressed fracture of anterior wall of frontal sinus.

REPORT OF CASES

CASE 1.—A raised, hairy, pigmented mole measuring three-fourths inch in diameter was located in the outer third of the eyebrow, almost entirely within its limits (Fig. 1). Under local anesthesia, two horizontal incisions 2½ inches long were made, and a square containing the mole was removed. The two horizontal flaps were undercut and approximated. Small triangles were removed at the ends of the incisions to avoid puckering. The edges were carefully sutured (Fig. 2). The result was excellent, and six months later, only slight shortening of the eyebrow was evident. The tension being in a horizontal direction, there was no change in the forehead wrinkles or the level of the eyebrow.

CASE 2.—A marine, injured by a machete in the hands of a Filipino, had a vertical cut extending upward from the eyebrow, breaking in the anterior wall of the frontal sinus and leaving a depressed scar (Fig. 3). Suppuration continued for two months, and two operations were done for removal of necrosed bone. The patient came into my hands eight months after the injury.

Under local anesthesia, the scar was excised and the sinus was found to be closed off from its connection with the nasal cavity. A mass of fat from the abdominal wall was inserted and the skin closed over it. One year later, the scar was almost invisible, and the contour of the forehead and eyebrow appeared normal.

CASE 3.—A marine, shot in an altercation with a bootlegger, had two buckshot penetrate the eyelid and eyeball, remaining in the orbit. Two lodged in the frontal sinus and one in the maxillary sinus.

Thirty hours after the injury, under general anesthesia, an incision was made within the limits of the eyebrow, a flap was raised and the sinus opened, the two buckshot were removed and the sinus closed without drainage. The eye was enucleated. Clean healing followed. After a suitable artificial eye had been fitted and the eyebrow had grown again, no evidences of injury were visible. The shot in the maxillary sinus caused no trouble, and a roentgenogram taken sixteen months later showed it to be fixed in its position.

CASE 4.—A young woman was shot with a 0.45 caliber pistol held close to the right temple. The bullet entered at the outer end of the eyebrow, passed laterally, shattering the orbital plate of the frontal bone, ruptured the eyeball, and lodged in the cortex of the left frontal lobe of the brain. The skin wound was a ragged three-limbed laceration with a third degree burn in the center.

Fig. 4 (Case 5).—Heavy line shows extent of the laceration.

After the shock had subsided, the wound was debrided and the deeper parts cleaned with a suction syringe. A profuse flow of meningeal fluid and pus persisted for several days. Three weeks from the time of injury, the bullet having been localized by the roentgen ray, it was removed by trephining the left frontal bone through an incision above the hair line; the right eye was enucleated, and several fragments of necrotic bone were removed. The three lines of the original laceration were excised, and the flaps thus formed were approximated. Seven weeks from the time of the injury, the wounds were healed, a glass eye was fitted, and there was no evidence of injury except a small scar and slight ptosis of the upper lid.

CASE 5.—A boy, aged 5, was knocked down by a bicycle. The pedal of the bicycle caught under the supraorbital ridge of the left eye. There was a laceration, down to the bone (Fig. 4), along the orbital margin from the supra-orbital notch to the inner canthus, and around to the middle of the inferior orbital margin, with detachment of the orbicularis; also fracture of the nasal bone and of the cribriform plate of the ethmoid, with severe concussion. There was a laceration 2 inches long above the left eyebrow.

The primary treatment consisted of cleaning the wounds and treating the shock and concussion. Forty-eight hours later, under general anesthesia, an examination was made, and the eyeball was found intact. The lacrimal duct was badly torn. The orbicularis and skin were returned to their proper positions and sutured there. A drainage tube was inserted into the nose through the space left by a missing piece of the nasal bone. Profuse suppuration followed, draining freely into the nose while the superficial tissues healed nicely. Twelve days after the injury, he was discharged from the hospital with the skin wounds healed, vision 10/20 and normal range of motion of the injured eye, some ptosis of the upper lid, and a purulent discharge which drained into the nose.

Three months later, the ptosis of the upper lid had considerably increased, because of scar contraction about the inner canthus. Under ether, the scar tissue was excised and the canthus freed. The skin edges were carefully approximated so as to leave no raw surface. After healing, there was very fair movement of the lid, but a slight purulent discharge continued, draining into the nose.

ABSTRACT OF DISCUSSION

DR. VILRAY P. BLAIR, St. Louis: I never have seen those dermoids mentioned in the literature, but this is an exact picture of the dermoids above the eye. The preservation of bone in these injuries of the face is of tremendous importance. It is not uncommon for a man who first attends them to pick out a bone carefully that may be difficult to replace later. If the supra-orbital or infra-orbital ridge, or the arch of the frontal bone, is allowed to heal in malposition, and then one is asked to repair it, one may have more trouble than one knows how to rectify. If the supra-orbital ridge and the vertical plate of the frontal bones have been removed, it is worse to hold out the soft tissues and get normal contour; one cannot bring the brain forward, and one has to keep working in grafts to fill the dead space. A Wolfe graft of the eyebrow is a good way of doing it, probably not as good as a flap graft in the final result; but, on the other hand, it does away with the forehead scars. In studying these Wolfe grafts, an observation has led me to believe that the hair must come from the superficial part of the epithelium, because if a blister forms and epithelium is lost, it may heal perfectly smoothly, but no hair will grow in that spot. The hair that is in the transplant always comes out. If a little skin with the brow is desired, one can get hair-bearing skin and skin without hair from behind the ear which makes nice material for the eyebrow and the lid at the same time. I generally put a Wolfe graft on when I take a flap away from the forehead, as Dr. Johnson recommended, yet I am not sure that this is best. If there is time and one wants to get the best possible cosmetic result, one can make the vertical flap that he spoke about, which is usually large enough for a great many kinds of repairs, and then instead of grafting it, let it granulate and heal over, skin that off and put on a Thiersch graft. The result is better than with the average Wolfe graft.

DR. ROBERT H. IVY, Philadelphia: In the restoration of the eyebrow I have had very good results by using a pedicle flap from the edge of the scalp, and I feel more confident of having a successful take that way than by a free full thickness graft. The direction of the hair in this region from which the flap is taken seems to be very suitable when transplanted to the eyebrow region, and the incision along the edge of the hair does not seem to leave much of a scar after healing has occurred. Frequently the hair is shed from the distal end of the flap, shortly after it is brought down, but in a week or two it grows again and the patient has to keep the hair trimmed.

Juvenile Delinquency and Epicritic Control.—Experience in juvenile delinquency teaches that in many of the cases the basic causal factor is a regression to an earlier period of childhood, whereby a mental conflict is solved. There is, in other words, a suppression of epicritic control. It would therefore appear reasonable to suppose that the lesions in encephalitis, whatever their precise histologic character, lead to a reduction of this epicritic control, which may be compared with the geological process of denudation whereby the younger sedimentary rocks are removed by the action of the various physical agents, leaving bare the ancient primitive rocks on which they have been deposited. The tendency to an obliteration of the distinction between "meum" and "tuum," the all-or-none type of irritability, the complete disregard of the interests of others, manifested in the nocturnal orgies of singing and shouting, together with the failure of self criticism, seem characteristic of a protopathic condition.—Auden, G. A.: *J. Ment. Sc.* **71**:657 (Oct.) 1925.

AUTONEPHRECTOMY

ANIMAL EXPERIMENTATION, WITH REPORT OF AN UNUSUAL CASE *

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AND
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SAN FRANCISCO

Autonephrectomy is essentially an occluded renal tuberculosis, and although in our experimental work we have been dealing to a certain extent with pyogenic organisms, some German and French schools hold various views concerning the aspects of the pathologic conditions existing. Yet, one cannot find in the literature any case in which pyogenic organisms are the sole causative factor in the walling off of the kidney with the pelvis and the ureter so that these structures remain enclosed for any period of time.

tuberculosis. He showed that some men believed that there was a possibility of spontaneous healing, yet in all of the cases of his series, tuberculous activity could be demonstrated. He pointed out that while the bladder symptoms may often be considerably ameliorated by renal isolation, yet he never saw one case in which they were completely and permanently quiescent. He felt that all cases were prone to exacerbation and always demanded surgical intervention.

There has been much written on autonephrectomy since Zuckerkandl cleared up the clinical significance of the closed tuberculous kidneys, and though there is a bibliography appended to this article, we will mention only a few of the recent writers, including Caulk. Probably the most comprehensive modern article written in Europe is that by Alois Wolff on enclosed cavernous renal tuberculosis, in which he reports nine cases and reviews the literature of this "spontaneous nephrectomy." In four cases described,

TABLE 4.—*Summary of Autonephrectomy Experiments in Rabbits*

Type of Autonephrectomy Produced	Operations: First Group: Injection of 1 C.c. Tubercle Bacilli in Right Ear Vein	First Group: Injection of 1 C.c. Tubercle Bacilli in Parenchyma	First Group: Injection of 1 C.c. Tubercle Bacilli in Pelvis and Ureter	First Group: Injection S. aureus 1 C.c. in Ear Vein	First Group: Injection S. aureus in Parenchyma	First Group: Injection S. aureus in Pelvis	First Group: Ligation Artery	First Group: Partial Ligation Artery	First Group: Ligation Ureter	First Group: Fiber Traumation of Parenchyma	Second Group: Removal Artery Ligation	Second Group: Removal Ureter Ligation	Second Group: Injection of 1 C.c. Tubercle Bacilli in Ear Vein	Second Group: Injection of 1 C.c. Tubercle Bacilli in Parenchyma	Second Group: Injection of 1 C.c. Tubercle Bacilli in Pelvis	Second Group: Injection S. aureus in Ear Vein	Second Group: Injection S. aureus in Pelvis	Total Number of Rabbits
Caseated cavernous	..	2	..	..	..	..	4	8	12	..	6	6	6	4	..	..	..	12
Pyonephrosis	6	..	4	..	..	..	..	4	6	10	4	2	..	..	..	..	10	10
Atrophic sclerosis	6	..	..	..	..	..	6	..	..	6	6	..	6	..	..	..	..	12
Hydronephrosis	4	..	4	..	..	..	..	..	10	..	2	2	..	..	2	..	..	10
Number of lesions produced	3	1	..	2	1	2	..	..	1	1	..	1	..	2	..	1	..	4
General miliary tuberculosis	2	..	..	..	..	..	..	..	2	..	..	2	..	2	..	..	..	2
General pyogenic infection	..	..	..	3	..	..	2	..	1	..	1	1	..	..	..	..	..	3
Died, cause unknown	..	2	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	2
Died from anesthetic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5

In this table the four types of autonephrectomy mentioned above were produced. The various types of pathologic processes depended on the type, time and site of injecting the infective bacteria, as well as on the ligation of the ureter and artery and trauma of kidney tissue.

In reviewing the literature, Caulk,[21] in 1915, reported seven cases and read the most comprehensive paper on autonephrectomy presented in this country. Pardoe [22] reported twenty-one cases, and five cases presenting completely walled off lesions. Keys,[23] in a case of seventeen years' duration, showed a completely destroyed kidney at necropsy. Heitz-Boyer [24] reported a case of closed left kidney, and cited another case of a patient supposed to be cured of renal tuberculosis for twelve years. This patient later had a swelling in the loin, and eight years after the swelling appeared, consulted a physician, and on nephrectomy there was found a totally destroyed caseous kidney.

Then, in 1921, Caulk [27] reported sixteen autonephrectomies out of ninety-seven cases of nephrectomy for

the ureter was only intermittently obstructed and the kidneys were removed before the full clinical picture had resulted. In discussing Foley's paper on the "Diagnosis of Anomalous Renal Artery," W. H. Mayo said that, in Europe, some older surgeons reported at one conference patients being cured after passing tubercle bacilli in the urine for a time. The assumption was that though the patient had tuberculous kidneys, he had entirely recovered. Dr. Mayo pointed out that there had been no cystoscopic examination, and his inference was that, in these several reported cases, the respective kidneys were dead on the affected side; that is, "closed kidneys without function, but still tuberculous."

CLASSIFICATION

In reviewing the literature, it will be noted that several types of tuberculous involvement of the kidney are mentioned as causative factors in the production of autonephrectomy. The question now arises, How many types of tuberculous involvement will be found with enclosed renal lesions and which are the more frequent types of infection? One school divides tuberculous involvement of the kidneys into six types: (1) miliary; (2) nodular tuberculosis; (3) ulcerocavernous; (4) tuberculous pyonephrosis; (5) tuberculous hydronephrosis, and (6) tuberculous nephritis.

* A general discussion of the literature will be found in the Transactions and reprints.

* From the Department of Urology and the Hooper Foundation for Research, University of California Medical School.

* Read before the Section on Urology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the authors' reprints.

21. Caulk, J. R.: Occluded Renal Tuberculosis, Tr. Am. Urol. A. **9**, 1915.
22. Pardoe: Lancet, December, 1905.
23. Keys: Tr. Am. Urol. A., 1914.
24. Heitz: J. d'urol. méd. et chir. **2**: 537, 1912.
27. Caulk, J. R.: Renal Tuberculosis, J. Urol. **6**: 97-113 (Aug.) 1921. Harbitz is cited in this article.

By adding one more type to the foregoing classification, namely, atrophic tuberculous sclerosis, and ruling out the miliary, nodular and tuberculous nephritis, we have in the four remaining types practically all the general classes of kidney lesions that are described by the various authors in their cases of autonephrectomy. To recapitulate, the various pathologic conditions found in the enclosed renal lesions from this review of the literature, in the order of their reported frequency, are: (1) ulcerocavernous tuberculosis; (2) tuberculous pyonephrosis; (3) tuberculous atrophic sclerosis, and (4) tuberculous hydronephrosis.

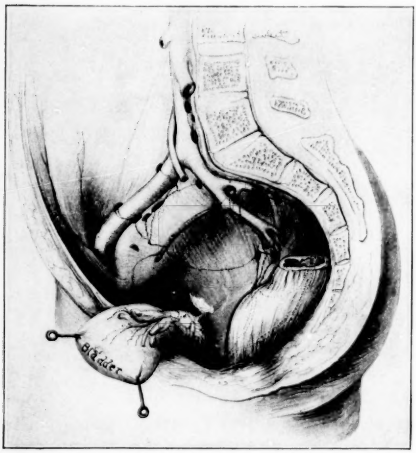

Fig. 1.—Schematic drawing of lymph nodes of the bladder and prostate, showing the external iliac and hypogastric lymph nodes of the pelvis, all injected following injection of India ink at base of bladder.

DEFINITION

Now, with these pathologic pictures in mind, what would be a comprehensive definition of autonephrectomy? Crabtree and Cabot[34] have said of kidney infections in general: "There is no subject in which there is so little uniformity of opinion and so much confusion. The literature of the subject is stupefying both in quantity and in complexity, and any one who has attempted to master it will be convinced of the fact that it is more likely to confound than to enlighten the reader." In the descriptions of autonephrectomy, the diseased kidney has been called by the various writers: "walled off," "enclosed lesion," "functionless," "closed ureter," "destroyed," "caseated cavernous," "dead," "closed tuberculous kidney" and "spontaneous nephrectomy." According to certain authors, not only must the kidney be destroyed, but the diseased tissues must contain no live bacteria, so that the kidney must be absolutely harmless to be considered a type of autonephrectomy. They quote Kurlow and Green to show that as long as there is caseation, one can find, by means of microscope and guinea-pig inoculation in the tissue, a possibility of further infection. But with the vast majority of writers on the subject, this is altogether too narrow a view, since a great many quote Zuckerkandl, who gave the name to this type of lesion. He showed that "induration of a tuberculous kidney and hardening of the parenchyma may be taken as a local recovery but never absolute," and that the enclosed kidney is always a present menace to the other, and removal is urgently recommended, so the type he had in mind was far from being sterile.

Another question that ought to be cleared up in giving a definition is whether tuberculous or pyogenic infections predominate in this type of kidney. Wolff logically sums up the discussion by stating that the tuberculous involvement outweighs all others, and, although he admits that the closing of the ureter may sometimes come from penetration of infected pus from the bladder, he closes the argument by offering these two comprehensive general classes of infection: (1) closed cheesy cavernous tuberculous kidney, in rare cases with the addition of a mixed infection, and (2) closed tuberculous pyonephrosis.

Three other points have to be kept in mind in rendering a definition. 1. Zuckerkandl and others have described cases of autonephrectomy in which the infection has penetrated the capsule and involved the perinephritic fat. 2. Many writers, including Caulk, have shown that only a portion of the kidney may be destroyed and enclosed while the remaining parenchyma may be healthy and functioning with an open ureter. 3. We are describing a kidney with patent ureter and pelvis with parenchyma separated from the pelvis and destroyed. With all these points in mind, we may find autonephrectomy as a primary enclosed tuberculous involvement of all or a portion of the kidney, with or without a superimposed mixed infection and with a ureter and pelvis either closed or patent.

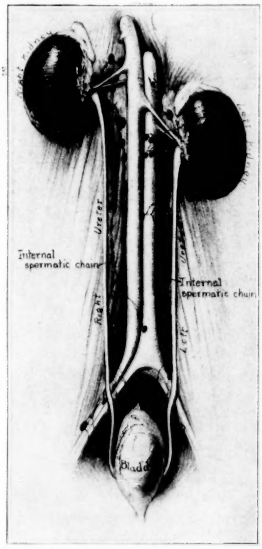

Fig. 2.—Schematic drawing of lymph nodes from bladder to pelvis of each kidney, showing especially the internal spermatic chain of nodes that were injected following injection of India ink at base of bladder. This is a sketch taken directly from specimen by Mr. Sweet of the University of California.

ROUTES OF INFECTION

Hematogenous.—As to the routes by which bacteria pass to the kidneys to infect and produce hydronephrosis, the hematogenous has been generally accepted as the most common route. However, tubercle bacilli in the urine of a ureter are by no means a sure diagnosis of tuberculous infection of the respective kidney. That

34. Crabtree, E. G., and Cabot, Hugh: Colon Bacillus Pyelonephritis, J. A. M. A. **68**: 589-591 (Feb. 24) 1917; Boston M. & S. J. **174**: 780 (June 1) 1916; Surg., Gynec. & Obst. **23**: 495 (Nov.) 1916.

the pyogenic organisms and colon-typhoid group may pass through the unharmed kidney tissue has been shown, but there may be a superimposed mixed infection in the kidney that already has a tuberculous infection.

Fig. 3.—Direct extension from bladder to kidney of dog: The ureteral catheter is invaginated and tied into the urethral catheter in the bladder. The right kidney with free outlet is normal. The left kidney, with no outlet from the bladder, shows a definite pyonephrosis. Experiment of seven days' duration.

This occurs more commonly than is supposed and is proved by the ingenious experiments of Marshall and Crane [48] and Dyke,[49] who showed by injecting the bacteria in a rabbit's ear that these germs appear in the urine six hours later. Most observers, on finding no microscopic lesions, draw the conclusion that the bacteria have done no harm, yet the last named investigators have shown conclusively that, in the majority of cases, if the kidney tissue which excreted the germs is incubated for a period, numerous colonies develop in and out of the tubular epithelium. In our work reported below, experimenting on rabbits and dogs, we not only have corroborated the work of Marshall, Crane and Dyke, but also have proved that with the least possible damage to the kidneys, it is easy to infect them with tubercle bacilli and the pyogenic group by way of the blood stream. We did not use the colon group, since in animals the latter germs act differently than they do in man; namely, more like the pyogenic bacteria.

Ascending Infection by the Lymphatics.—Infection by the lymphatics goes hand in hand with the hematogenous route, since Sakata [50] and others have shown that, while the lymphatics of the upper ureter drain into the lymphatic system in the region of the kidney pelvis, the lymphatics of the lower ureter drain into those of the anatomic pelvis, and Sugimura,[51] in a series of twenty-one cases, showed that in the presence of acute cystitis the lower third of the ureter was constantly involved. Franke [52] has shown a lymphatic communication between the right kidney capsule and the adjacent ascending colon. Now in severe cystitis and especially in severe diarrhea, the bacteria engulf the lower lymph vessels, jump the protecting nodes, pour into the blood stream, and produce kidney lesions by the hematogenous route. By injecting India ink and 1 cc. of an emulsion of 1 billion live tubercle bacilli at the base of the bladder in an animal, we were able to trace with a strong magnifying glass and microscope the India ink and bacteria through the system of lymph nodes described by Sugimura [51] in the vicinity of the ureters to the pelvis of the kidney. Krenger [53] has also been able to trace lymphatics from the bladder to the kidney and produce renal infection.

Direct Ascending Infection by the Urinary Passages.—In discussing direct ascending infection, we find again among the investigators a considerable variance as to nomenclature, and what is meant. Several writers speak of ascending infection as extension from the upper ureter to the kidneys; others speak of extension from the lower ureter up to the pelvis, while the great majority refer to extension from the bladder. Now there is little question as to the extension from the upper ureter, while many writers disagree as to the possibility of an ascending infection from the bladder.

Now given a bladder, a ureterovesical sphincter and ureter all in healthy condition, with constriction in the region of the prostate, can infected urine in that bladder infect the kidney? Many writers quoted above have already said that the kidney could not be infected without first damaging the bladder wall, the sphincter and the ureter, which may take place after a considerable lapse of time. We have proved conclusively, we think, in experiments on dogs, the contrary to be true; namely, that the infected urine in the bladder will promptly produce a pyonephrosis, provided of course that the other kidney is functioning normally through a different channel. Thus it will be seen, in discussing

Fig. 13.—Left kidney showing caseated cavernous condition, with right kidney about normal in appearance and size.

48. Marshall, E. K., Jr., and Crane, M. M.: Influence of Temporary Closure of the Renal Artery on Amount and Composition of the Urine, Am. J. Physiol. **64:** 387-403 (April) 1923.

49. Dyke, S. C.: The Passage of Staphylococcus Aureus Through the Kidneys of Rabbits, J. Path. & Bacteriol. **26:** 164-175 (April) 1923.

50. Sakata: Ueber de Lymphapparat des Harnleiters, Arch. f. Anat. u. Entwicklungskr. **1,** 1923.

51. Sugimura: Ueber die Beteiligung der Uretera und der akuten Blasenentzuendung, Virchows Arch. f. path. Anat. **206,** 1911.

52. Franke: Etiologie der Koli Infektion, Arch. f. Anat. u. Physiol., 1910.

53. Krenger: Centralbl. f. d. Krankh. d. Harn u. Sex.-Org., **14:** 229. 1903.

these different routes of infection, that authorities differ on many questions, and we believe that considerable work will have to be done to settle many of the mooted questions.

SITES OF INFECTION

Primary Focal Infection.—The primary focus of the tubercle bacillus in the kidney is at the base of the pyramids in the region of Henle's loops.[59] Depending on the natural immunity that the patient may have, the tuberculous infection may remain localized in this region for years, and one may find here caseation, calcification and connective tissue formation. In patients of low resistance, the infection rapidly spreads, first in the pelvis, which is nearer than the cortex, and

Fig. 15.—Typical autonephrectomy (left) pyonephrosis. There is total destruction of the parenchyma, and the cavity is filled with cheesy matter and pus. The right kidney is about normal in size.

from the pyramids, extending along the tubules and by the lymphatics and possibly by the blood throughout the medullary and cortical portions of the kidneys.

Tuberculous Infection.—There may be an anatomic as well as a pathologic significance in the fact that at the base of the pyramids where the tubercle bacilli take first hold, the interlobar arteries bifurcate in the interlobular arteries and arteriae rectae. We are prepared to show that primary infection in the vicinity of this bifurcation produces a slight passive congestion of the circulation, which, in turn, is the cause of atrophic changes in the whole kidney of a beginning tuberculous infection. There are certain factors that may change this picture, such as early mixed infection and early closing of the ureter.

Bacteria in Mixed Infection.—Regarding the primary site of mixed infection, it has been shown by various investigators, notably Cabot and Crabtree, that the pyogenic group involves, first, the glomeruli and descending tubules, and also ascends by the lymph channels directly to the cortical surface. The characteristic lesions of these organisms are perinephritic abscesses, cortical abscesses, septic infarct and diffuse suppuration. The colon-typhoid group, on the other hand, after congregating in the collecting tubules, quickly break through into the pelvis, and their characteristic lesions are acute pyelitis, acute pyelonephritis, chronic pyelonephritis and pyonephrosis. It is interesting to note here that the pyogenic bacteria remaining in the vicinity of the renal capsule do not appear in the urine of a kidney so infected, nor does such an infection affect the phenolsulphonephthalein count to any degree, whereas the colon-typhoid group is found early in the urine, and on account of destroying areas of the medullary portion of the parenchyma, naturally, as may be expected, the phenolsulphonephthalein test is quickly lowered.

Primary Tuberculosis of Ureters.—That tuberculosis may be a primary infection in the ureters has been shown by various writers with reports of cases. The primary foci seem to start at the anatomic constrictions of the ureter, the one, near the pelvis, and the other, near the bladder. The way tuberculous ureteritis obliterates the ureter is that the tubercles proceed to ulceration. These ulcerated surfaces unite, cause a collapse of the ureteral walls, and finally grow together by connective tissue formation with absorption of the necrotic and caseous matter of the ulcerated areas, or the ureter may be closed from the healing of ringlike circular ulcers.

DIRECT EXTENSION

As for the direct extension of infected processes to the kidney or bladder, ulceration, of course, may take place anywhere along the course of the pelvis and ureter; but the most common sites are the naturally constricted portions of the ureter. Then cheesy masses of blood coagulum from the kidney may block the lumen with the former, causing ulceration and constriction, whereas the latter first may organize, and then cause ulceration and finally obliteration of the ureter. As mentioned above, under tuberculous infection of the ureter with ultimate closing of the passage, any form of constriction or obstruction of the urinary passages below may be a predisposing factor with tuberculosis in the kidney or bladder. If there is slow advancement of the tuberculous process, due to the unusual immunity of the patient, or if ringlike ulcers form in the ureter with healed stricture formation, there may be an intermittent opening and closing of the ureter over a considerable period of time, the constriction giving way to pressure of urine when a sufficient amount accumulates above the infected constriction.

FINAL PATHOLOGIC PICTURE

The length of this article prohibits our going into a detailed description of the final pathologic pictures in autonephrectomy. When we consider the various possibilities of tuberculous renal involvement with the mixed infections superimposed, including the upper and lower ureter and several types of bladder involvement, all exerting their influence on

59. Ekehorn: Die Ausbreitungsweise der Nierentuberkulose, in der tuberkulose Niere, Fol. Urol. **2**: 412, 1908.

the final picture, and also the very vital point as to how much natural and acquired immunity the patient has for the particular types of infection, the resulting pathologic kidney may be any one of almost infinite varieties. All that can be done here is to discuss, briefly, the four general classes mentioned at the beginning of this article, and outline some factors among the pathologic forces that greatly influence the healing and destructive processes in the terminal picture of autonephrectomy.

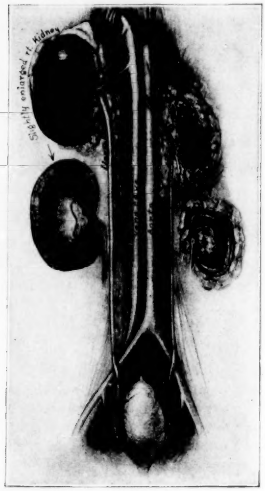

Fig. 16.—Drawing of left kidney atrophic sclerosis following injection of the parenchyma with tubercle bacilli and partial ligation of the artery; some sclerosis with marked calcification of perirenal fat. It is a totally destroyed and walled off kidney.

Closed Cavernous Type.—The closed cavernous type, which is the most common, has its beginning usually with tubercles forming at the base of one pyramid in the sluggish stream of the collecting tubules. From here, the process extends to the papilla and walls of the calix, and the tuberculous process usually chokes the connecting channel to the pelvis. Thus, we may have the whole kidney destroyed, or the destructive process existing only in a portion of the parenchyma and walled off, while the remaining parenchyma may perhaps show only slight tuberculous involvement, with scattered scar tissue.

Tuberculous Pyonephrosis.—According to König,[8] Penel,[61] Kuster,[2] Israel,[16] Frank [39] and others, if a pyonephrosis develops, it is indicative of mixed infection, and then we have the complex picture of a tuberculous involvement more or less advanced, with perhaps the colon bacillus superimposed by direct extension to the ureter, pelvis, calices, etc., or by the hematogenous route, spreading downward from the convoluted tubules and working havoc in the same direction as the tubercle bacilli. Or if a pyogenic infection exists, there will be a purulent infection of the cortical and perirenal tissues added to the primary tuberculous infection.

Cause of Atrophied Kidney.—According to Hinman and others, when infection takes place in a kidney, a tendency to anuria exists, and this slowing of the urinary excretion is in direct proportion to the virulence and extent of the infection. We may offer two reasons for this condition: (1) The toxins of such an infection dampen the sensory impulses to the excretory cels, and (2) the bifurcation of the interlobar arteries into the interlobular and arteriae rectae at the base of the pyramids is in the vicinity of the collecting tubules in which the tuberculous processes often have the primary seat of infection. With the formation of coalescing tubercles, endothelial proliferation, ulceration, caseation and general hyperemic congestion in the vicinity of these primary bifurcating arteries, not only are the arterial walls partly compressed, but there is also a tendency to obliterative endarteritis, with the narrowing of the lumen and checking of the blood flow to that particular portion of the kidney. This in turn will naturally lessen the flow of urine in the whole lobule above. It also has been proved by Marshall and Crane and by our experiments, to be mentioned, that checking the blood flow to a kidney will produce general atrophy of the parenchyma of that organ. Thus, it is not surprising in the first two types of autonephrectomy, often to find atrophied kidneys with enclosed renal lesions, although, of course, depending on the amount of anuria, and the early arterial constriction of pus formation, there must be exceptions as to the kidney's size.

Tuberculous Atrophic Sclerosis.—The third type, in order of frequency, is atrophic sclerosis with primary tuberculous infection. In this type, there is usually

Fig. 19.—A beautiful case of tuberculous hydro-ureter in left rabbit kidney ureter. The atrophic cavernous kidney is at the side of the hydro-ureter. This condition was produced in the rabbit by injecting live tubercle bacilli in the wall at the junction of the pelvis with the ureter and ligation of the ureter farther down. The right kidney is slightly hypertrophied and seems very small in comparison.

destruction of the kidney with complete anuria probably taking place before the obliteration of the ureter, so there is no indication of a hydronephrosis having

61. Penel: Renal tuberculose, Lyon méd. **113**: 5-76, 1909.

existed. There may be a secondary infection occurring late that may so involve the diseased kidney substance as to mask completely the primary tuberculous involvement. Indeed, cases are reported with the remains of a kidney from one-fourth to one-tenth the normal size which may be bathed in a perinephritic abscess. The distinctive microscopic feature of this type is the connective tissue formation and calcification, which processes resulted from absorption of the preexisting caseation. There are various other types in this atrophic group. In long standing cases, there may be complete absorption of liquid from the caseated cavernous and the tuberculous hydronephrotic types with complete collapse of the walls, leaving a collapsed sac with little or no caseated and calcified matter, and the sac may be bound down with caseated and

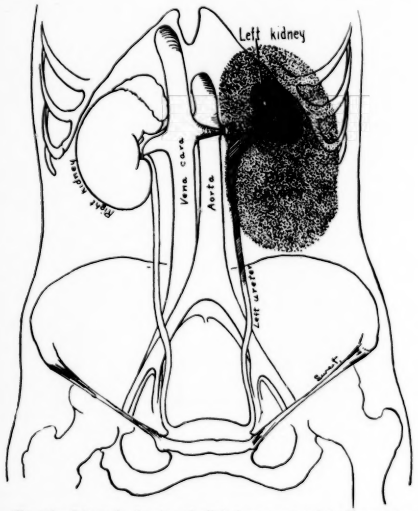

Fig. 24.—Schematic drawing of clinical case reported in Transactions and reprints, showing an autonephrectomy kidney about half the normal size bathed in pus and with the pedicle entirely separated.

fibrous adhesions, rendering it difficult or impossible to differentiate the kidney remnant.

Tuberculous Hydronephrosis.—An early closing of the ureter from (1) direct extension upward from the bladder, (2) extension downward from the pelvis, (3) primary tuberculous involvement of the ureter, and (4) some obstruction other than tuberculosis in the ureter or below, will usually produce a hydronephrosis of the kidney that has only slight tuberculous involvement when the ureter becomes occluded. Thus, though no urine can pass through the ureter, there is practically no anuria, and the kidney continues to excrete, with the back pressure of urine being the main factor in the final picture. The largest types of hydronephrosis are seen with the obstruction of the ureter near the kidney, for when the ureter is closed near the bladder, the ureter above becomes a sort of "safety valve" dilated sac as does also the pelvis, and the damage and compression of the kidney parenchyma is not so complete, nor the kidney tumor so large. Venous engorgement first takes place with beginning hydronephrosis due to pelvic dilatation. With increased pressure, there is a thinning out of the renal parenchyma which is first seen in the lateral portions of the kidney, as shown by Hinman [62] in a series of ingenious experiments. According to this author, the sagittal median portion of the parenchyma is most resistant to the back pressure. The collecting tubules become dilated early with collapse of Henle's loops. The cause of the irregular nodulation of the hydronephrotic kidney surface is the early pressure atrophy of the collecting tubules that empty on the sides of the papillae, while those that open centrally "have a parallel course to the pelvic axis and remain dilated longest." [62] The glomeruli are the last to atrophy and even after ninety days' hydronephrosis, these structures may be seen clusteringly grouped in the median sagittal portion of the parenchyma. A kidney with tuberculous hydronephrosis may be of immense size, the largest of the four groups of autonephrectomy. Many such cases are reported in the literature and, for example, Sappington [28] reported one tumor of tuberculous hydronephrosis weighing 3,600 gm., or twenty times the normal size, and Braasch, of the Mayo Clinic, in a letter to Sappington, reported removing this type of tumor of similar size.[63]

COMMENT

This case [64] was undoubtedly a type of tuberculous atrophic sclerosis with calcification and connective tissue formation in the parenchyma. Superimposed was a staphylococcus infection which accounted for the perinephritic abscess, and also a colon bacillus infection. Our explanation for the final picture is as follows: Obliterative endarteritis began with the initial tuberculous infection of the pyramids. Some of the tuberculous infection probably extended to the pelvis, with beginning ulceration of the upper part of that cavity. With the superimposed *Staphyloccus aureus* infection which was probably in the beginning subcapsular, pressure from the enclosed pus in the region of the calices approximated the previously ulcerated pelvis walls, which, as we have shown in the case of the ureter, grew together and probably healed without further extension of the tuberculous process. The pus-pressure necrosis actually separated the pelvis from the parenchyma of the kidney, and the artery and vein, undergoing obliterative endarteritis, were probably separated from the kidney in the same manner.

This patient gave a typical "kidney" history. Five years previously, after a severe attack of scarlet fever, she had an attack of acute nephritis and from that time on was never robust and strong. With the markedly weakened kidney tissue, there was an ideal field for tuberculous infection. How long the kidney was walled off or dead is not known, but the process was advancing probably for years and was manifested in the eclampsia attack as well as the previous symptoms and run down condition of health with marked secondary anemia.

CONCLUSIONS

A comprehensive classification and definition of autonephrectomy has never been attempted up to the present writing, and although the literature is voluminous, discussions on the subject have been conflicting.

62. Hinman, Frank: Hydronephrosis: Experimental Study on Rats, J. Urol. **1**:3 (June) 1919.

63. Details of the animal experimentation with four charts showing the work with sixty rabbits will be published in the Transactions and reprints.

64. Details of this case will be found in the Transactions and reprints. It was a case of left-sided autonephrectomy with the kidney parenchyma separated from its pedicle and bathed in 1,000 c.c. of pus.

Tuberculosis is the active infection in the production of autonephrectomy, though a superimposed pyogenic or colon infection is often added in the final process of kidney destruction.

We have demonstrated that direct extension of infection from the bladder to the kidney through a healthy ureterovesical sphincter is possible. Also, we corroborated the work of many other investigators who have shown that infection may spread from the bladder region to the kidney directly by the lymph channels.

Out of the almost infinite number of pictures possible in autonephrectomy with mixed infection, we offer a classification of four general types, deduced from experimental work.

Our preliminary report on the experimentation with sixty rabbits has shown the various types of pathologic processes in the production of autonephrectomy.

The gross pathology of our specimens suggests most decidedly tuberculosis, but the microscopic picture is atypical of tuberculosis when compared with human kidney tissue; however, microscopically tuberculous renal destruction is strikingly similar to that of other animals.

380 Post Street.

TECHNIC FOR ORCHIDECTOMY

WHEN BOTH EPIDIDYMIS AND TESTIS ARE INVOLVED BY TUBERCULOSIS *

CHARLES S. VIVIAN, M.D.
PHOENIX, ARIZ.

Pessimism is frequently the keynote in prognosis when tuberculosis attacks the male genitalia. Part of this pessimism arises from the fact that individuals who have genital tuberculosis usually have the same malady elsewhere, notably in the lungs. Another cause for apprehension arises from the fact that the extent of the disease in the genitalia either precludes its complete removal by surgical means or entails long palliative treatment, always in the face of a possible generalization from the infected foci.

Early recognition of pulmonary tuberculosis leads to a more favorable prognosis. Similarly early recognition of genital tuberculosis is attended by more optimism for recovery, if the condition is adequately dealt with.

Treatment in pulmonary tuberculosis is essentially the same in all stages. It is summarized in one word, "rest."

Treatment of genital tuberculosis depends on the point at which the vicious circle is intercepted, plus rest.

It is beyond the scope of this paper to discuss the relative merits of the various surgical procedures that are advocated in attacking this problem. My intention, rather, is to present a method that has proved satisfactory for the limited number of cases in which it is indicated. The operation is not offered as a substitute for the firmly entrenched and justifiably popular operation of epididymovasectomy.

The indications for the two operations are different. In epididymovasectomy, the surgical problem presented is one in which the epididymis and vas deferens are involved by tuberculosis and the testis, if it is involved, carries so little infection that, if it is allowed to remain, it does not endanger the patient's health. The operation I am about to discuss is offered as the procedure of choice, when it seems advisable to remove the testis, together with any other areas involved by tuberculosis; that is to say, when the testis is involved to such an extent that, if allowed to remain, it becomes a menace to the life of the patient.

The most favorable case for its employment is one in which the patient is making a clinical arrestment of his pulmonary tuberculosis, but is being poisoned by absorption from a rapid development of the disease in the testis and epididymis.

Barney found that forty-four of 100 testes removed because they were associated with tuberculous epididymides showed microscopic evidence of tuberculosis. All of these were cases of unilateral involvement. Is it not safe, then, to assume that microscopic involvement of the testis may take place early in genital tuberculosis?

It is not my purpose here to suggest that the testis be removed, when the involvement is only microscopic,

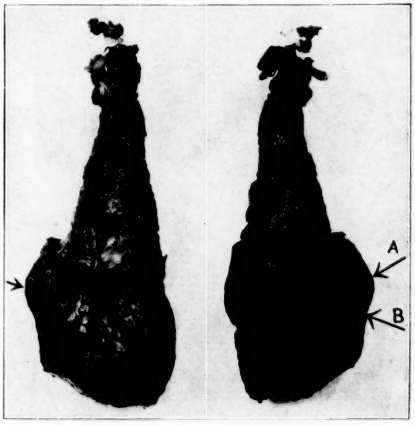

Fig. 1.—The gross specimen, as removed intact, demonstrates that there has been no spilling of tuberculous material. The fact that the abscess, *A*, has been removed intact in the sinus bearing area of the skin, *B*, may be noted.

for indeed the microscope is necessary for the diagnosis, and the gland should be conserved in the hope that by less radical surgery the burden of the patient may be lessened to the extent that he can overcome the involvement in the testis. But when this involvement in the testis has become macroscopic and the condition is still unilateral, orchidectomy is indicated for two reasons: first, because removal of the epididymis and vas deferens will not prevent dissemination of tuberculosis from a diseased testis by way of the blood or lymphatic streams; second, because removal of an actively tuberculous testis lessens the total of the load that the patient must carry.

The extent of involvement at the time the patient presents himself determines the procedure of choice. Careful consideration of the patient's general condition by one whose entire effort is directed toward the care of the tuberculous is essential.

Advocates of epididymovasectomy may believe that all tissue requiring it can be removed by this operation

* Read before the Section on Urology at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

(epididymovasectomy), plus curettage or resection of the infected areas in the testis. In some of these cases, however, curettage or resection, if they are thorough, which they must be to be effectual, would involve ultimate destruction of the testis, either from leakage or

Fig. 2.—The testis shown in Figure 1 has been split to demonstrate the involvement. The abscess area has not been opened.

from subsequent formation of fibrous tissue. Furthermore, curettage and resection are both open to the objection that, in their employment, tuberculous material may be forced into the general circulation at the time of operation.

Recent investigation of the subject suggests that the earliest infection of the genitalia occurs in the seminal vesicle. The procedure that I am to consider may be combined with the operation of seminal vesiculectomy. Likewise involvement in other parts of the genital tract may be dealt with as indicated at the time of operation.

Once one has come to the conclusion that the testis is to be sacrificed, together with the other tuberculous foci, the following procedure is undertaken:

TECHNIC OF OPERATION

As most of these cases present one or more skin sinuses, these are sterilized with phenol (carbolic acid) and are covered by sterile cotton held in place by collodion.

The entire operative area, including the cotton collodion dressing and an area of skin giving access to the inguinal canal, is now painted with iodin, or more recently with mercurochrome-220 soluble. Under procaine anesthesia, the inguinal canal is opened and the cord drawn out of it. The vas deferens is isolated, pulled up from the abdomen as far as possible and doubly clamped and divided by the actual cautery. The vessels of the cord are doubly clamped, as soon as the vas deferens has been definitely separated from them. This procedure serves to shut off from the general circulation at the earliest possible moment the infectious material in the scrotum.

Treatment of the severed proximal end of the vas deferens, which is of importance, is now undertaken. It should not be ligated but should be secured in the wound, because of the subsequent drainage that, in all probability, will take place from it. A silkworm-gut suture, one end of which carries a skin needle, while the other end is armed with a round needle, is used. The round needle is passed through the wall of the vas deferens, with particular care so as not to enter the lumen. The skin needle is passed from within outward through the fascia and skin. The suture is tied, securing the vas deferens in the wound just under the skin. The clamp is allowed to remain on the distal end of the vas deferens. Division of the vessels of the spermatic cord is then accomplished by means of the actual cautery, and the proximal stump, having been securely ligated, is dropped back into the abdomen. The clamp is allowed to remain on the distal end of the vessels.

Isolation of the infected epididymis and testis from the general circulation is now complete, except for the anastomosing vessels of the collateral circulation. The divided end of the vas deferens, which has been left sutured in the wound, may open spontaneously after a variable length of time has elapsed following the operation, or it may have to be opened to allow drainage. This drainage, under heliotherapy, proper hygiene and carefully controlled tuberculin administration, ceases when the vesicle is no longer actively diseased. If the seminal vesicle of the affected side is not removed, this procedure affords it complete physiologic rest, which may be secured in no other way.

As described above, the diseased tissue is blocked off from the general circulation; then, under infiltration procain anesthesia, aided by that already introduced around the cord, an incision is carried well around the sinus bearing area and upward in a single line on the scrotum. The incision should extend through the skin and dartos muscle. These structures are reflected lat-

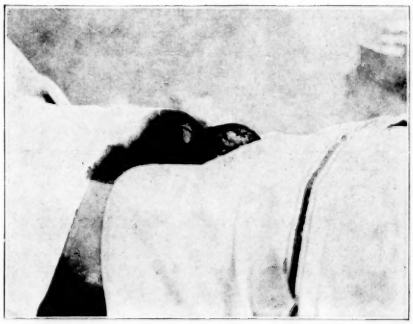

Fig. 3.—The sinus bearing area has been covered by cotton collodion dressing, and the operative area painted in preparation for preliminary treatment of the vas deferens and vessels of the spermatic cord.

erally until a line of cleavage is found between them and the scrotal contents, beyond the point at which they are adherent. The actual cautery may be used to free the infected adherent tissue, but this is unnecessary, if the line of incision is carried well away from the sinus bearing area, and if it particularly avoids any

area in which there is a tendency for the scrotal contents to adhere to the skin. Dissection outside the tunica is then completed, so that the testis and epididymis, with the infected skin area, are free from all attachment and with the exception of the skin area are enclosed within a membranous covering (the tunica).

If dissection has been carefully carried out, the wound in the scrotum should be clean. Now the clamps that were left on the cut ends of the vas deferens and the vessels of the cord are pushed gently down through the inguinal canal into the scrotum, and removal is complete when these clamps are released.

Fig. 4.—Dissection is complete. The structures in the scrotum are ready for removal, and there has been no spilling of tuberculous material.

The wound over the inguinal canal is closed by skin clips. A small drain may be inserted in the scrotum to be removed in twenty-four hours, and this incision is closed in one or two lines, dependent on the shape of the excised skin.

Dressings are held in place over the scrotal incision by means of a snug suspensory.

The following brief outline of a case history serves to illustrate the type for which this operation was undertaken.

REPORT OF CASE

A man, aged 33, Jewish, and the father of one living healthy child, was referred to me from Phoenix Sanatorium, Oct. 20, 1923, because of swelling in the scrotum of the left side. He had spent nine months in the sanatorium, because of a moderate involvement of both lungs by tuberculosis. The pulmonary condition was arrested, and the patient was allowed to be up and about, until return of elevated temperature and symptoms in scrotum were noted. From two areas on the scrotum pus was exuding. The left epididymis and testis were swollen and very tender. The situation of the skin sinuses suggested that they might be coming from the testis, although the epididymis was involved to a greater extent. There was no evidence of involvement in the upper urinary tract, so that cystoscopy was not done. The prostate and vesicles were not notably enlarged. Both epididymis and testis were removed by the technic outlined above and showed numerous caseating areas, about equally divided between them. The sinuses were leading from the epididymis.

Ten days after operation, the cut end of the vas deferens opened and drained a small amount of pus for three months, when it healed. The wound in the scrotum healed by first intention. The patient did not return to the sanatorium, after leaving the hospital on the tenth day after the operation; the subsequent history was obtained from him after he sought treatment from an associate for acute tonsillitis, April 15, 1925. He has gained 10 pounds (4.5 kg.) since the operation, and is earning a living for himself and his family as the proprietor of a small grocery, in which he does all the heavier work.

CONCLUSION

A technic is presented by which a tuberculous testis may be removed without soiling the operative area and by which danger of dissemination of tuberculosis at the time of operation is minimized.

Goodrich Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. PLAYER AND REDEWILL, AND DR. VIVIAN

DR. A. L. CHUTE, Boston: There is a doubt in my mind whether we want to do the operation described by Dr. Vivian often. I think we do not. Most patients with tuberculosis of the epididymis and vas get well. For the case in which one wants to operate, Dr. Vivian has presented a very good plan. His isolating the cord and tying the vessels, as he does, before handling the testis or epididymis in his attempt to remove it, may be the means of preventing a miliary tuberculosis and death. Dr. Vivian's method seems to offer a rational way to prevent this. I like sewing the cord into the wound. We must assume, I believe, that the primary location of tuberculous disease in the seminal tract is the vesicle, and fixing the cord in the incision takes care of the suppuration that is almost sure to occur. It is a well-thought-out procedure.

DR. C. M. HARPSTER, Toledo, Ohio: About twenty years ago I had a patient with tuberculosis of one kidney, which was verified by cystoscopic examination, guinea-pig inoculation and similar tests. I advised nephrectomy. He went to another large clinic, where my findings were verified, and nephrectomy advised, which he refused. I saw him shortly afterward, and he said he had been cured at some irregular institute. I was anxious to verify this by guinea-pig inoculation and he consented, several years ago, to a reexamination. I found that the bladder, which had been badly involved at the time of my original examination, apparently was symptomatically cured. I have seen a number of cases which I was pleased to call spontaneous exclusion of the kidney verified by roentgen-ray examination and ureteral catheterization which have followed calculus diseases. I do not think the speaker meant to infer that we have exclusion only from tuberculosis. In quite a large number of cases I have searched the bladder with the cystoscope, have observed the urine coming from the ureters, and have found in some cases that there was no urinary impulse on one side, and following the ureteral catheterization with a roentgen-ray examination have found the calculi and the exclusion of the kidney. Some of the ureters in which the kidney had been excluded were badly contracted, indurated and thickened.

DR. DANIEL N. EISENDRATH, Chicago: There are two routes by which an ascending tuberculous infection reaches the kidney: (*a*) by reflux of bladder contents; (*b*) by the lymphatics of the ureteral wall. The latter has been clearly demonstrated by the work of Bauereisen, who followed the infection in the lower third of the ureter in animals as it advanced by way of the lymphatics of the submucous and periureteral layers of the ureteral wall. There is still some opposition to the lymphatic route. Cabot, Crabtree and others hold that infection by way of the lymphatics of the ureteral wall does not ascend to the kidney but passes into the lymph nodes, which lie at intervals along the course of the ureter, and from these nodes into the systemic circulation. My view, based on experimental work, agrees with that of Bauereisen; viz., both nontuberculous and tuberculous infections ascend by way of the lymphatics of the ureter without any material drainage into the regional lymph nodes. One must be careful not to make a diagnosis of bilateral renal tuberculosis unless one considers the possibility of regurgitation of infected vesical contents into the ureter and renal pelvis.

DR. CLYDE W. COLLINGS, New York: I think Dr. Vivian's procedure will reduce to a minimum the chance of spreading miliary tuberculosis. During the last six years in Bellevue

Hospital we have had two patients develop miliary tuberculosis, following orchidectomy for tuberculosis. We have been clamping off the cord as he does in the operation for teratoma of the testis, but were not smart enough to figure out that the technic could be used for tuberculosis. We will incorporate Dr. Vivian's method and I think it will help solve our problem.

DR. W. R. DELZELL, New York: I wish to ask Dr. Player about the clinical treatment of the patients with autonephrectomy: is the kidney left in or taken out? We have had patients with a bag of pus remaining after an autonephrectomy, with symptoms persisting that necessitated nephrectomy.

DR. LIONEL P. PLAYER, San Francisco: The work of Dr. Eisendrath, though not mentioned in that portion of the paper which I read before the Association, is definitely mentioned in another portion of my paper. I had one case report of autonephrectomy that induced me to perform these series of experiments. This case report was not mentioned because of lack of time. In this case, examination showed the kidney substance absolutely dissected away from the pedicle and pelvis. No ligatures were necessary except for bleeders in the incised wound. This kidney infection was a true autonephrectomy. In answer to Dr. Delzell: I believe, the same as Caulk, Wolf and a host of other surgeons, that a "dead" kidney will sooner or later give trouble and it should be taken out, never left in as a possibility of the breaking out of new infection in the future.

DR. CHARLES S. VIVIAN, Phoenix, Ariz.: I do not wish to convey the idea that we operate in every case of tuberculous epididymitis or orchitis. Many patients come to us who are far beyond surgical aid. Occasionally, however, we find one in whom we believe that by removing the testis or the epididymis we can stop the process in the genitalia. I think the answer to the problem is this: If we can lessen the patient's burden by removing a focus of tuberculosis, then we are justified in operating. The cases in which there is a sinus on both sides sometimes clear up very nicely after a long time, with the aid of the sun. We have a different sun in Arizona—it is hotter and lasts longer. I spoke of tuberculin. We believe it should be administered in a sanatorium, with the patients under the care of a man who is devoting his entire time to tuberculosis.

ARTHRODESIS FOR TUBERCULOSIS OF THE SACRO-ILIAC JOINT

STUDY OF THE END-RESULTS *

M. N. SMITH-PETERSEN, M.D.
AND
WILLIAM A. ROGERS, M.D.
BOSTON

This study is based on thirteen cases in which operation was performed during the last seven years for tuberculosis of the sacro-iliac joint. The results obtained from this operative treatment justify a distinctly more optimistic attitude than has hitherto been entertained.

An end-result study should fulfil a twofold purpose: It should establish or disprove the value of diagnostic methods and it should establish or disprove the value of treatment.

DIAGNOSIS

The diagnosis depends on a very careful history, as well as a careful examination.

A detailed discussion of signs and symptoms diagnostic of sacro-iliac conditions was read before the American Orthopedic Association in 1924. An outline of it must suffice here (Table 1).

The almost constant finding of radiation pain over the posterior aspect of the thigh and leg is of importance, because of its diagnostic value in any sacro-iliac joint condition, whether traumatic or inflammatory. Since we find this distribution of pain present in 77 per cent. of cases of tuberculosis of the sacro-iliac joint (Table 2), we feel justified in drawing the conclusion that this so-called "sciatica" is typical of any condition involving the sacro-iliac joint.

We can draw no definite conclusions from Table 3. The list may or may not be present; sometimes it is toward the side complained of, sometimes away from the side complained of.

TABLE 1.—*Outline of Symptoms*

1. History:		
	a. Onset:	Traumatic
		Nontraumatic
	b. Pain:	Local
		Radiation
2. Examination:		
	a. Inspection:	List
		Muscle spasm
	b. Palpation:	Areas of tenderness
	c. Motions:	Standing
		Sitting
		Lying
	d. Special tests:	
		Straight leg raising
		Compression of iliac crests
		Passive lumbar flexion

TABLE 2.—*Analysis of History*

Site of Local Pain:	Region of inferior sacro-iliac ligaments and sacrosciatic notch 92% (12 of 13 cases)
Subjective Areas of Radiation Pain:	a. Posterior aspect of thigh 77% (10 of 13 cases)
	b. Posterior aspect of leg 62% (8 of 13 cases)
	c. Course of superior gluteal nerve 15% (2 of 13 cases)

TABLE 3.—*Analysis of Physical Examination*

	Inspection	
List	45% (5 of 11 cases)	
	Toward Lesion	Away from Lesion
	1	4
	Subacute	Acute
	1	4
Spasm of erector spinae.....	50% (5 of 10 cases)	

TABLE 4.—*Analysis of Physical Findings; Points of Tenderness on Palpation*

Inferior sacro-iliac ligaments and sacro-sciatic notch	100.0%	(13 of 13 cases)
Distribution of superior gluteal nerve.....	15.0%	(2 of 13 cases)
Sciatic nerve trunk.....	7.7%	(1 of 13 cases)
Lumbosacral region	0	
Entire gluteal region.....	15.0%	(2 of 13 cases) Psoas abscess
Lower abdominal quadrant.....	15.0%	(2 of 13 cases) Psoas abscess

In Table 4 it is interesting and important to note that the physical findings agree so closely with the subjective symptoms. In Table 1, there was seat of pain, region of the inferior sacro-iliac ligaments and sacrosciatic notch in 92 per cent. of the cases (twelve out of thirteen). On physical examination we find the inferior sacro-iliac ligaments and sacrosciatic notch sensitive to palpation in 100 per cent. of cases (thirteen of thirteen cases). Pain of the superior gluteal nerve was present in two cases of the thirteen, or 15 per cent.

It is most important to emphasize again and again the fact that in none of these cases was sensitiveness at the lumbosacral junction found. A negative finding of this sort, as constant as in these cases, we feel is as

* Read before the Section on Orthopedic Surgery at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.

important as a positive finding. The entire gluteal region and the lower abdominal quadrant were sensitive to palpation in two of thirteen cases; both of these patients had psoas and gluteal abscesses.

TABLE 5.—*Symptom Analysis; Motions*

Increased range of forward bending sitting over that of standing	60%	(3 of 5 cases)
Average increase	20°	

TABLE 6.—*Special Tests*

Passive Lumbar Flexion:		
Over 145 degrees	50%	(4 of 8 cases)
Less than 145 degrees	50%	(4 of 8 cases)
Straight Leg Raising:		
Average limitation of affected side when present	25°	
Average limitation of unaffected side when present	24°	
No limitation on affected side, but accompanied by pain	50%	(5 of 10 cases)
No limitation on opposite side	70%	(7 of 10 cases)
Average difference, affected and opposite sides	1°	
No limitation or pain	33%	(3 of 9 cases)

TABLE 7.—*Symptom Analysis*

Compression of iliac crests, positive	38%	(3 of 8 cases)
Rectal examination, positive	50%	(2 of 4 cases)

TABLE 8.—*Roentgen-Ray Findings, Preoperative*

Destructive process involving joint surfaces and adjacent bone	13 of 13 cases	100%
Increased density present	7 of 13 cases	54%
Periarticular thickening	3 of 13 cases	23%
Disalinement of pubes	2 of 13 cases	15%
Fusion, postoperative	9 of 9 cases	100%

No aggravation of pain on forward bending, standing or sitting was present in two of eleven cases, 18 per cent.

There are two points to be noted in Table 5. First, in the majority of cases, we get increased range of motion in the sitting position over the standing position. This finding is explained by the elimination of ham string leverage on the joint, in the sitting position. Second, two cases showed no aggravation of pain on forward bending, standing or sitting. These cases, we feel, are cases of partial fibrous ankylosis; even though there is active disease, the joint is stable and, consequently, pain is not aggravated by putting the joint under strain or leverage.

Fig. 1.—Incision along posterior two thirds of iliac crest, curving around the posterior superior spine, then running parallel with the fibers of the gluteus maximus for a distance of from 2 to 3 inches.

In discussing Table 6, we want to bring out the fact that 50 per cent. of the cases show passive lumbar flexion of more than 145 degrees. If the pelvis is moved as a whole and the ham strings are relaxed, there is no leverage transmitted to the sacro-iliac joints; consequently there is no pain. The 50 per cent. that did show limitation of lumbar flexion were cases in the acute stage, and the patients were markedly sensitive over the sacro-iliac joint, so that they were unable to stand the pressure of this region against the table.

Straight leg raising was limited by an average of 25 degrees, considering normal straight leg raising as approximately 70 degrees with the horizontal plane.

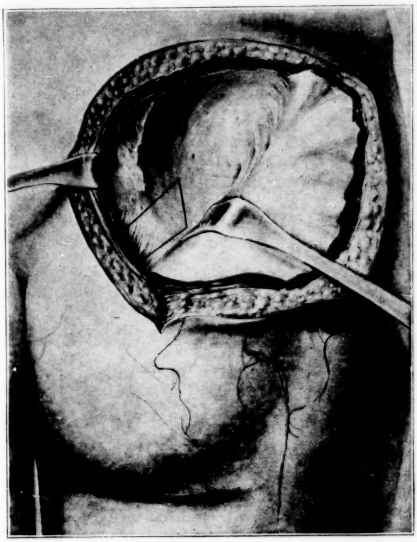

Fig. 2.—Flap outlined by incision as described under Figure 1 is reflected subperiosteally, exposing the lateral surface of the ilium. If the sacro-iliac joint is projected on the lateral surface of the ilium, it will be found that the inferior border corresponds to the sacrosciatic notch, and the anterior border to the median gluteal line.

Whenever straight leg raising is positive—that is, markedly limited—in inflammatory conditions, such as tuberculosis, it is apt to aggravate the pain when performed on either side, the affected and the unaffected, the difference between the two sides averaging no more than 1 degree.

In only 38 per cent. of the cases was pain elicited on compression of the iliac crests. This finding speaks for itself, and is a test considered by many orthopedists as pathognomonic of sacro-iliac conditions, and without which few orthopedists venture to suspect the sacro-iliac joint. Such a test is negative in more than half the cases with a proved destructive process.

Rectal examination is more worth while than it would seem from Table 7. It was recorded in only four cases, but was actually performed in practically all. The records are incomplete, but they are those on which this paper is based. In active tuberculosis, rectal examination is positive in the majority of cases.

In the early stages we find increased density along the joint line and in the soft tissues at the inferior margin of the joint. In the later stages there is, in addition, erosion of the joint line and bone atrophy of the ilium and sacrum. Disalinement of the pubes may occur in the more advanced stages of destruction.

Sixty-nine per cent. of the patients have returned to and worked at their previous occupations for an average of 7.6 months. Three patients have worked for more than six years, without local recurrence and without any secondary foci.

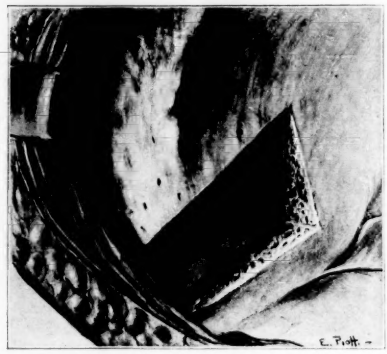

Fig. 3.—With a motor-driven saw, a window is removed from the ilium; this window extends posteriorly into the inferior sacro-iliac ligament.

Ninety-two per cent. have had no pain since the time of operation. This means that the operation fixed the joint, eliminated motion and, therefore, relieved the pain.

By complete recovery we mean freedom from subjective symptoms, negative physical examination and return to previous occupation.

By partial recovery we mean relief from pain, but persistence of discharging sinuses. Two of the three patients under the latter classification have returned to their original occupations; the third did return but had to give up because of a secondary focus in the lumbar spine.

TABLE 9.—*Duration of Disability*

Return to Previous Occupation	Duration of Symptoms Preoperative	Average Time of Return to Light Activity	Average Time of Return to Full Activity	Average Time at Full Activity	Length of Time Free from Pain
8 of 13 cases 69%	Average 17 mos. from 4 to 36 mos.	7.5 mos. from 3 to 15 mos.	12.6 mos. from 4 to 32 mos.	7.6 mos. from 3 mos. to 6½ years	Since operation 12 of 13 cases 92%

TABLE 10.—*End-Result*

Complete recovery	6 of 13 cases	46%
Partial recovery	3 of 13 cases	23%
Deaths	4 of 13 cases	31%

There have been four deaths. The first of these occurred in a patient who had an extensive abscess which, following operation, became secondarily infected; the patient left the hospital against advice and died three months later. The second patient returned to her previous occupation, following the sacro-iliac arthrodesis. A year later she developed Pott's disease and was treated by spinal fusion, but she died six months later from tuberculous meningitis. The third patient returned to her previous occupation entirely relieved; a year and a half after her operation she died from tuberculous peritonitis. The fourth patient was operated on in the presence of a discharging sinus leading down to an area of osteomyelitis in the posterior crest of the ilium; in spite of a persistent discharging sinus, he returned to his previous occupation, but died two and a half years after operation, from tuberculous peritonitis.

Death has not occurred in a single instance as a direct result of the operation.

CONCLUSIONS

1. This end-result study has definitely established the value of certain diagnostic methods.
2. Operation—arthrodesis of the sacro-iliac joint—is indicated by the results obtained.
3. The prognosis in sacro-iliac tuberculosis, when treated by arthrodesis, is not, as stated by Jones and Lovett, "the most fatal of all joint affections."

31 Bay State Road.

ABSTRACT OF DISCUSSION

DR. W. C. CAMPBELL, Memphis, Tenn.: Dr. Smith-Petersen has given us a very comprehensive study of the signs and symptoms of affections of the sacro-iliac and lumbosacral region. I regard his method of operation as the best that has ever been originated for the purpose of fusing the sacro-iliac joint, though I have had no experience with other measures. The operation can be done very rapidly; it requires only a few minutes; there is practically no shock, and it is safe. As to the indications: In the incipient or early stage, fusion is indicated. If there have been extensive destructive changes, abscess as noted by external swelling and induration or secondary infection with or without a discharging sinus, it is doubtful whether the operation is indicated at all, as there is danger of instituting a more extensive infection. It is well known that tuberculosis with secondary infection is never cured and rarely arrested. In one case in which I did not suspect an abscess, on reaching the joint I found a large tuberculous abscess. Secondary infection developed, with persistent sinus formation and finally death

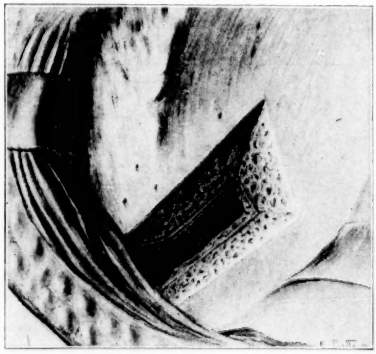

Fig. 4.—Sacral joint surface is removed, exposing cancellous bone; joint cartilage is curetted with angulated curets.

from tuberculous meningitis. In one other case, I discovered an abscess and advised against operation. It followed the same course after operation elsewhere. Tuberculous meningitis seems to be rather common in the sacro-iliac region. The question of fusion of joints, sacro-iliac and otherwise, is a most interesting one. These cases prove that tuber-

culosis is a general disease. We are not giving enough attention to the tuberculous patient. We are spending a great deal of time talking about fusing everything, and too little time and attention is given to the general welfare of the patient afterward. Heliotherapy is a very potent factor in the treatment of tuberculosis. All these patients should be treated by heliotherapy after fusion, whether early or late. If we did this, we should have better results. Fusion of a joint does not cure the disease. We may eradicate it locally, but we do not eradicate the disease from the organism as a whole.

DR. M. S. HENDERSON, Rochester, Minn.: Dr. Smith-Petersen's presentation is of value chiefly for two reasons: First, because of the careful outline of his method of diagnosis. There is one diagnostic point he mentioned that I was relieved to hear; that the old-time test of squeezing together the iliac bones does not always produce pain in sacro-iliac tuberculosis cases. The second point of great value is the iliac bones does not always produce pain in sacro-nothing to add to the technic. I think it is the best method we have, but I cannot refrain from referring to what Dr. Campbell mentioned. Generally speaking, as orthopedic surgeons, we have paid too little attention to the general treatment of our patients with tuberculosis of the joints. I believe we must do much more of that, and treat the patients as we would treat patients with tuberculosis of the lungs. The operative risk is slight. The deaths all came late, after the patients had made a recovery from the operation. As Dr. Smith-Petersen pointed out, these patients died of meningitis, etc., after they had had an ankylosis of the sacro-iliac joint, showing that the operation at least accomplished what he set out to do.

Fig. 5.—Angulated curet.

DR. F. J. GAENSLEN, Milwaukee: Dr. Smith-Petersen has shown that mechanically and in a surgical way the joint can be arthrodesed satisfactorily. The roentgenograms show that conclusively. He has devised a method that is an advantage over most of the methods that I have seen or read about before, in that he gets at the joint by way of an interosseous route. He does not take away the posterior third of the ilium, as some men have done, disturbing the strong ligamentous supports on which the integrity of the joint depends. I should like to outline briefly the method which I use. It consists in splitting the posterior portion of the ilium with a broad chisel into two leaves, an outer and an inner leaf. The outer leaf, with the periosteum and overlying soft parts and skin, is deflected outward. Then the remaining inner, standing leaf is attacked over the site of the sacro-iliac joint, and the joint, having once been found, by means of curet and chisel it is followed as far as may be necessary. That method does not attack the ligaments and the muscles that bind the sacrum to the ilium. The integrity of the joint, so far as its ligamentous support is concerned, is not interfered with. Much depends on the area of involvement, and on the area or size of the joint. The sacro-iliac joint varies a great deal. Sometimes it is comparatively narrow; it is of less than the average height. Then, there may be a sacralized lumbar vertebra, with an unusually long joint. If a small area is involved in such a large joint, naturally one would not expect much pain on compression of the iliac crest; but, with comparatively large involvement in a relatively small point, it is much more likely to occur. The negative findings are of doubtful value, but a positive sign means a great deal.

DR. F. H. ALBEE, New York: I believe that the diagnosis must depend wholly or very largely on the roentgen ray. I do not believe that any one should attempt any operation on the sacro-iliac joint unless the diagnosis is confirmed by the roentgen ray. As to method of procedure, I favor extra-articular arthrodesis in all tuberculous joints, wherever the technic is possible, in which there is activity of disease. The danger of metastatic infections in the meninges or elsewhere from going into an active tuberculous joint and doing a plastic operation is very real. Metastatic infection may not

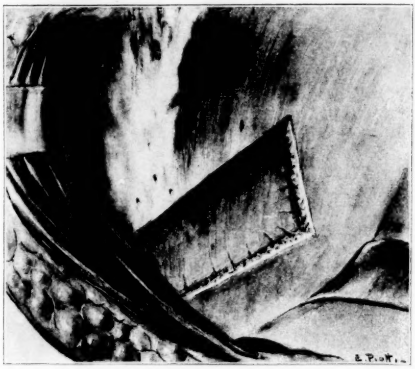

Fig. 6.—After the block of bone has been denuded of cartilage, this block is replaced and countersunk, so that its cancellous surface comes in contact with the cancellous bone of the sacrum.

come immediately; it may be delayed. The grafts hypertrophy in an extra-articular arthrodesis and hold. Of course, the graft is put to a great deal more mechanical stress in an extra-articular arthrodesis of the hip than of the sacro-iliac joint. In the sacro-iliac joint it is extremely favorable, and the technic is extremely simple. The mechanical features of the operation just explained are very clever and I am sure are very good. The only disadvantage I can see with it is the danger of stirring up metastatic infections.

Fig. 7.—In order further to secure the countersunk block, and also to promote osteogenesis, the edges of the window are osteotomized.

DR. F. R. OBER, Boston: The principal thing Dr. Smith-Petersen has shown is the excellent results obtained from a well planned operation and the importance of a careful examination of the spine in order definitely to localize the lesion. The roentgenograms in these cases of sacro-iliac tuberculous infection are not always very clear, but some-

times when one looks at one's old plates one will find cases that have been diagnosed as lumbar back strain which show an active lesion that is very small but that can be seen; and if one makes a series of plates at intervals of six or eight weeks one will notice the increase in the size of this lesion. About the operation, having seen many hemorrhages from

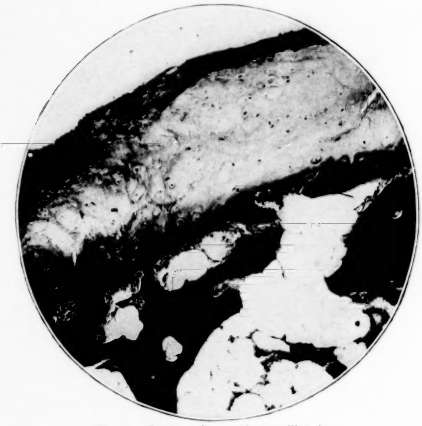

Fig. 8.—Section of normal sacro-iliac joint.

the superior gluteal artery in war service, I was a little hesitant before operating, so I got Dr. Smith-Petersen's original skeleton of the pelvis, from which he had taken out the bone plug. All who have not seen the operation done or are not perfectly familiar with the anatomy of the pelvis and all the structures beneath the sacro-iliac joint should do the opera-

Fig. 9.—Case of tuberculosis of sacro-iliac joint, showing round-cell infiltration and giant cells.

tion on a specimen before attempting it in the operating room. That will save a great deal of trouble.

DR. M. N. SMITH-PETERSEN, Boston: Dr. Campbell questioned the advisability of operating in cases in which an abscess was present. In the cases in which operation is done in the presence of abscess the prognosis has not been as good as in cases without abscess, but even so, the prognosis has been much better than if the joint had been left alone. Without operation there is invariably extensive destruction and the outcome is practically always fatal. By this operation we are trying to imitate nature. Dr. Campbell also spoke about meningitis occurring as a complication of this operation. In three fatal cases there was one of meningitis and two of peritonitis. Of course, we would like to have the positive roentgen-ray picture, but it is not at all necessary. I do think that we can definitely localize lesions in the sacro-iliac joint and differentiate them from the lumbosacral region; maybe not at the first sitting but by repeated examinations sufficient evidence is accumulated so as to make a differential diagnosis possible. In connection with extra-articular arthrodesis, there is always the danger that dormant tuberculosis may be stirred up and metastatic abscesses or secondary foci result. I have always felt that the quickest way to cure tuberculosis is to get bony ankylosis at the site of the lesion even in the face of the possibility of a secondary focus. The wedge driven in between the posterior crest of the ilium and the dorsum of the sacrum would tend to spread the joint and consequently would not render the local condition in the joint as favorable for bony ankylosis as an operation that aims to

Fig. 10.—Another case of tuberculosis of sacro-iliac joint, showing round-cell infiltration, giant cells and caseation.

eradicate the joint. I have seen three cases in which the wedge operation was performed. The results were far from satisfactory. I agree with Dr. Henderson in regard to post-operative treatment and the need of emphasizing the importance of general hygiene and building up. A positive response to the test of "compression of the iliac crest" is distinctly in favor of the sacro-iliac lesion, but a negative response does not rule out a lesion involving a sacro-iliac joint. In regard to the technic of the operation: The superior gluteal artery is a real danger. An unskilled assistant can easily tear this artery or, rather, one of its major branches, by too heavy retraction. May I emphasize again the importance of radiation pain? "Sciatica" is a misused term. It is not sciatica; it is first and second sacral pain. The fourth and fifth lumbar are not involved in this radiation pain; pain is not referred to the anterior aspect of the leg and dorsum of the foot. Only two fifths of the sciatic nerve is involved. In trigeminal neuralgia, the divisions involved are always specified. One who wishes to use the term "sciatica" should say "sciatica with first and second sacral involvement." In three cases, urinary retention has been relieved after operation. Since the innervation of the bladder is derived from the second and third sacral nerves there is a possible relationship between the bladder innervation and the innervation of the sacro-iliac joint.

Clinical Notes, Suggestions and New Instruments

PITUITARY DISEASE IN A BOY, AGED FOUR

SIGURD W. JOHNSEN, M.D., PASSAIC, N. J.

R. B. was admitted to the surgical ward after an automobile accident, suffering from minor abrasions of the face, and a slight scalp laceration. He appeared to be about 10 years of age; he was well developed, but had an unusually well developed penis, like that of an adult, and an abundance of pubic hair. On the arrival of his father, it was ascertained that the boy was 4 years of age.

Fig. 1.—General overdevelopment.

Fig. 2. — Epiphysis of lower end of femur almost united with diaphysis; almost complete ossification of epiphysis of upper end of tibia.

Fig. 3. — Enlarged sella turcica with the posterior clinoid process almost vertical.

He was born, April 15, 1921, of normal delivery, at home, and weighed 9½ pounds (4.3 kg.). At the age of 1 month, the mother noticed that the bowels were habitually constipated. She then gave him daily cathartics. He was breast fed until 4 months old. After that he was given 4 ounces (120 c.c.) of whole milk every three or four hours. At the age of

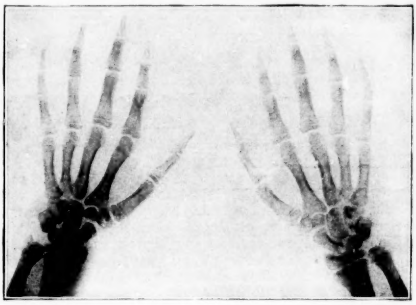

Fig. 4.—Advanced ossification of carpal bones and epiphyses of metacarpals and phalanges.

Fig. 5.—Advanced ossification of tarsal bones and epiphyses of metatarsals.

Fig. 6.—Ossification of internal and external epicondyles of humerus marked; head of radius and epiphysis of upper end of ulna show advanced ossification.

14 months he had an attack of convulsions, followed by two relatively mild attacks on the same day. Three weeks later he had another attack of convulsions lasting eleven hours. All the muscles of the body were involved. There has been no other attack up to present time. He had tonsillitis at the age of 2½ years, necessitating tonsillectomy, and measles in June, 1925. He began to talk at the age of 12 months, and walked at age of 14 months. The first tooth erupted at 6 months. The mother stated that he developed rapidly and was rather backward mentally, compared with his 3 year old normal brother.

The present weight was 65 pounds (29.5 kg.); height, 125 cm. Head measurements were: occipitofrontal circumference, 51 cm.; occipitomental, 60 cm. The neck measured 29 cm.; the chest, 67 cm.; waist, 65 cm.; arm length, 36 cm.; leg from the anterosuperior spine to the internal malleolus, 57 cm. The penis measured 12.5 cm.

Roentgen-ray examination of the skull showed an enlarged sella turcica with the posterior clinoid process almost vertical. The anteroposterior diameter was 1.3 cm.; the depth, 1.1 cm.

The roentgen-ray findings demonstrate a skeletal development corresponding with a normal osseous development of, at least, a 14 year old person. In the plate of the elbow, well developed osseous internal and external epicondyles are seen. The epiphysis of the head of the radius is ossified, and likewise the epiphysis of the upper end of the ulna. All the bones of the wrist are ossified, including the pisiform. This is true also of the bones of the ankle. The epiphysis of the lower end of the femur is almost united with the diaphysis. This is also true of the epiphysis of the lower end of the tibia.

Passaic General Hospital.

ENORMOUS CARDIAC DISTENTION

GEORGE L. KESSLER, M.D., BROOKLYN

This case should prove of interest, as I was unable to find any to compare with it in the literature:

P. M., a married woman, aged 31, a Jewess, was of good habits and had had no diseases of childhood, except at the age of 8, an attack of tonsillitis; this was followed by streptococcic arthritis, which cleared up and never returned, but left the patient with a stenosis of the mitral valve. The history up until the time I first saw her was indefinite.

She consulted me at 14 years of age for palpitation and indigestion. The physical examination at that time showed a heart of enormous hypertrophy and dilatation, with auricular fibrillation, mitral stenosis, aortic systolic murmur and tricuspid regurgitation. There was a slight icteric tint to the skin, and the liver was about three finger-breadths below the border of the ribs; urinalysis gave negative results; no edema was noticed; in fact, the symptoms complained of were slight compared to the condition found, and the patient was not depressed and did not seem to suffer much inconvenience.

From that time on, I saw her at long intervals for what she called slight attacks of indigestion and occasional edema of the ankles; the heart showed a gradual increase in size.

She married at the age of 25, against advice, and about one year later had a miscarriage. From that time her heart attacks came at shorter intervals, but she always promptly responded to medication and was about again in a few days. One year after the miscarriage, she had an attack of lobar pneumonia from which she recovered rather slowly. By this time her heart had become so large that I suspected an aneurysm of the heart and sent her to the Bushwick Hospital for rest and observation. The apex of the heart was in the left midaxillary line; pulsations of the auricle could be distinctly felt, and the tricuspid murmur was heard in the right axilla. Cardiac dulness was continuous across the entire chest, measuring 12½ inches across, and 7½ inches in the perpendicular. The blood pressure was 108 systolic and 86 diastolic.

A roentgenogram was taken and showed a shadow filling up the entire space mentioned. Dr. Evan Evans saw the patient, in consultation, and marveled that she could live. Under the fluoroscope, the contractions of the heart showed plainly. There were three distinct contractions of the auricles to one of the ventricles. The liver was below the crest of the ilium, and pulsations could be felt in it. The surface was smooth and the edge was rounded. The kidneys and spleen were not enlarged.

The Wassermann reaction was negative, and urinalysis gave negative results. Hemanalysis showed 3,900,000 red cells; 7,900 white cells, with 22 per cent. lymphocytes and 78 per cent. polymorphonuclears. Hemoglobin was 77 per cent. The temperature was normal; the radial pulse was 68, and the heart beats were 100. No fluid was present in the pericardium, though it was thought to be, from the roentgenogram made by Dr. Heymann of the Bushwick Hospital, a reproduction of which accompanies this report.

The patient could not tolerate digitalis in anything except small doses. While in the hospital, intensive treatment with digitalis was tried and caused embolic hemiplegia and much cardiac distress. The hemiplegia disappeared in a few days after the administration of tincture of belladonna in 10 minim

Condition about three years before patient died: Right auricle touches chest wall in right axilla and apex touches wall in left axilla; cardiac muscle at apex so thin that it is barely discernible, and so is outlined by ink marks; no fluid in chest.

(0.6 c.c.) doses three times a day. Afterward, strophanthus was given, with happy results. The patient recovered and went to the Adirondack Mountains. She felt fine for about four months. Her attack returned, and occasionally edema developed in the bases of both lungs and the ankles, but disappeared again. About three months before her death, she had a severe attack, with general anasarca, and an examination of the urine showed numerous casts and a large percentage of albumin. All efforts to relieve her were in vain, and Dr. Glenworth Butler was called in consultation. He also stated that it was the most remarkable heart he had ever seen. The patient passed away the latter part of June, 1925, having wasted very much during the last month. All of her final symptoms seemed to point to uremia, as her heart seemed still to act fairly well. Dr. Evans informed me that he had heard of only two cases, one in Germany and one in Ireland, that could compare in size with this heart. This patient lived eighteen years, to my personal knowledge, with a heart ordinarily considered incompatible with life.

1119 Bergen Street.

TOWEL SLING METHOD OF LIFTING PATIENT

DOUGLAS P. MURPHY, M.D., RUTHERFORDTON, N. C.

An easy method of lifting, not commonly employed, is shown in the accompanying illustration. It is more comfortable to lifters and patient alike than the method in which both arms of the lifters are passed under the patient's body. By this method two can frequently do the work of three.

Towel sling method of lifting a patient; a black cloth has been used for color contrast.

A towel is passed under the lower part of the body. The near end is grasped in the left hand of the person at the patient's head. The far end is held in the assistant's right hand. The other arms are passed under the patient's body. The lifting is most comfortable when the towel ends are grasped with the thumbs up, as shown in the illustration.

CONGENITAL ATRESIA OF ESOPHAGUS ASSOCIATED WITH ATRESIA OF ANUS AND TRACHEA; ESOPHAGEAL FISTULA

MAX THORER, M.D., CHICAGO
Surgeon-in-Chief, the American Hospital of Chicago

Cases of congenital atresia of the esophagus, though not rare, are of interest.

REPORT OF CASE

G. S., a boy, born, Sept. 29, 1925, had no rectal opening. September 30, the infant was brought to the American Hospital for operation. No abnormalities were discovered in the eyes, ears, nose, throat, chest, lungs, heart, abdomen, genital organs or skin.

After two attempts, owing to the child's failure to ingest the barium, roentgen-ray examination showed a distinct pouch formation of the esophagus at the sternal notch, the material failing to pass farther. Reexamination, after three hours, showed a small part of the unejected barium meal in the same pouch formation, no barium having passed beyond it. A soft rubber catheter passed into the esophagus reached the lower margin of the pouch, then reversed, the tip returning into the oral cavity.

With the double malformation present the condition of the infant was deemed hopeless, and it was decided that it would be useless to submit it to the shock of a double operation. The child gradually became weaker and died, October 2.

Necropsy was made by Dr. Frederick Gruneck. The digestive, respiratory and genito-urinary organs were removed from the body *en bloc*.

The stomach was small, about 1½ inches (3.8 cm.) long and one-half inch (1.2 cm.) wide in the widest diameter. The walls were markedly thickened, especially at the pylorus. The small intestines were collapsed, and the large intestine was distended with meconium. The lowest part of the rectum and the anus was absent, the blind end of the rectum being attached to the posterior bladder wall. There was no cloaca, the opening of the bladder and the urethra being apparently normal, without any communication between the bladder and the rectum.

The esophagus was dissected and separated from the surrounding structures. The proximal end comprised about one third of the entire length of the tract and ended in a blind pouch which was about 1¼ inches (3.2 cm.) long and one-half inch (1.2 cm.) wide in the widest diameter. The lower third of the esophagus was followed upward with a fine catheter and disclosed a general narrowing of its proximal end, as well as an esophagotracheal communication. The two ends of the esophagus were united by a fibrous cord. The finest catheter was used, and both the proximal and distal ends from the pharynx and the stomach were probed, but no communication between the two ends could be found. A very fine catheter was passed from the lower part of the esophagus into the trachea. Injecting the proximal end of the esophageal sac with fluid revealed no communication with the lower segment.

The anatomic diagnosis was congenital atresia of the middle third of the esophagus, congenital atresia of the trachea, esophageal fistula and congenital atresia of the lower portion of the rectum and of the anus.

The occurrence of an associated atresia of the lower part of the rectum and of the anus makes this case interesting. Reynolds and Morrison[1] say that associated malformations are uncommon, but Plass[2] found that atresia of the anus was observed in twenty-four out of ninety-four cases in which the presence of associated anomalies was noted. A Meckel's diverticulum also is frequently noted in these cases.

CONGENITAL ABSENCE OF THE ESOPHAGUS

ROBERT E. PARRISH, M.D., WASHINGTON, D. C.
Major, M. C., U. S. Army

W. L., a male infant, was born, Aug. 19, 1925, after normal labor lasting two hours and nine minutes, with left occipito-anterior presentation. The scalp was cyanotic, mucus coming from the mouth and nose. The crying was feeble. The child weighed 7 pounds (3.2 kg.). No external physical abnormalities were noted. Cyanosis was marked at times during the day of birth. A direct laryngoscopy was performed. The larynx was normal; the trachea was normal, and the small amount of mucus aspirated seemed to be located only in the pharynx and upper portion of the larynx. The heart was normal. A few moist râles were heard over the entire chest. Rectal feeding of glucose and whisky, given by mouth, resulted in regurgitation through the nose and mouth. Roentgen-ray examination, August 20, revealed a displacement of the heart to the right and evidence of air in the lungs. Rectal feedings were continued. August 22, direct laryngoscopy and aspiration of the larynx and trachea were done. The pharynx was normal. An attempt to pass instruments down the esophagus was not successful, all instruments coming to a full stop at about the normal position of the cricopharyngeus muscle. No lumen could be made out below this. A diagnosis was made of atresia of the esophagus, at the level of the cricoid cartilage. Gastrostomy was considered but not done. The baby grew weaker. The periods of cyanosis increased in frequency and duration. Oxygen was administered. The cyanotic attacks could be definitely assigned to salivary secretion passing into the larynx, as it could not pass into the stomach, the child not being able to cough and expectorate as frequently as was necessary to clear the passage. It died, August 23, three days after birth.

The findings at necropsy were congenital atresia of the esophagus, extending from the level of the cricoid cartilage to the cardia, where a small pouch projected up from the stomach. The pouch did not extend above the diaphragm. The atresia was complete. A fibrous cord about the size of a match extended from the hypopharynx to the cardia. No other congenital abnormalities were noted. Other necropsy findings were essentially negative, except for cardiac dilatation.

Walter Reed General Hospital.

1. Reynolds, R. P., and Morrison, W. W.: Congenital Malformations of the Esophagus, Am. J. Dis. Child. **21**: 339 (April) 1921.
2. Plass: Johns Hopkins Hosp. Rep. **18**: 259, 1919.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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INTRODUCTION

These articles are devoted to the development of correct technic in the administration of medicines: "correct technic" meaning the best way of accomplishing a certain result. The slipshod manner in which most physicians order medicines would be shocking, were it not so common. If surgeons were as careless of their surgical technic as doctors in general are of their medicinal technic, surgery would be much less successful and far less popular.

Prescribing has almost become a lost art. The cause of this is to be found in the great development during the last fifty years of pharmacodynamics, so that nearly all the time previously allotted to the study of the drugs—and of how to use them—is now required for the teaching of the action of drugs. The result has, no doubt, been excellent as far as introducing greater precision in the choice of medicaments is concerned, but it has been unfortunate in that it leaves young medical men peculiarly helpless in the administration of medicines. It is of importance for success not only that the right remedy be given, but also that it be given in the right way.

PRESCRIBING IN ENGLISH

Another reason for insufficient instruction in the technic of prescribing lies in the time and effort used on an attempt at teaching prescription writing in Latin. So much attention is given to mere form that the substance is lost sight of. In the past, the study of prescription writing has chiefly meant the acquisition of a form of diction, archaic rather than classic; for what is called Latin prescription writing makes use of a vocabulary of which the ancient Romans were largely innocent. Prescribing in Latin, it is alleged, secures for our prescriptions an unchanging form, which can be interpreted by the initiated all over the world, and toward the laity a desirable degree of secrecy. In point of fact, our Latin nomenclature is far from being unchangeable; changes are made at each pharmacopeial revision. It is not international, for various nations, in a large number of instances,[1] have different terms for the same preparations and the same term for preparations that are different. That a Latin prescription can be filled anywhere in the world does not alter the fact that indiscriminate refilling of prescriptions is no less undesirable when the patient travels than when he is at home. In most instances, the Latin and English terms are so similar that the use of the former really does not contribute to secrecy, were such desirable; but, with the spread of intelligence in matters medical among the laity and the coincident waning of charlatanism among medical men, secrecy in prescribing has become superfluous. The modern physician is frank toward his patient; he has nothing to hide, and indeed he delights in tactfully taking the patient into his confidence. While, therefore, none of the arguments in favor of Latin prescription writing can be said to be irrefutable, there are a number of arguments in favor of prescribing in English. Among them are the following:

1. Few of us are sufficiently versed in Latin to be able to express directions to the pharmacist that are in any way unusual. Even if we were capable of writing such directions in Latin, not one druggist in a hundred would be able to understand them. Latin prescription writing absolutely stifles originality in prescribing. New drugs are continually being introduced, the coining of the Latin names for which is an embarrassment to the prescriber.

2. The fear of making mistakes in the Latin form is one of the contributing causes to that abomination in therapeutics, the prescribing of ready made proprietary mixtures.

3. A large number of prescribers are not able to write correct prescriptions in Latin. An investigation[2] on the quality of prescription writing in this country showed that less than a half of all prescriptions are written in correct Latin form—surely a poor showing for the time and energy invested in teaching Latin prescription writing. Is it not better to write prescriptions correctly in English than incorrectly in Latin?

4. By far the most important reason for writing prescriptions in English lies in the difficulty medical students have in learning the Latin form. To the student, prescription writing is a bugbear. When one thinks of the crowded medical curriculum and the comparatively small number of hours set aside for pharmacology and therapeutics, it seems a pity to waste any of it on the acquiring of an antiquated form of expression.

5. Experience of years has shown that English prescriptions are just as efficient as Latin prescriptions.

The real reason for prescribing in Latin is historical. It originated in the days when Latin was the chief medium for exchange of scientific thought. No longer are scientific lectures delivered in the Latin tongue; no longer are medical books written in Latin; no longer is it considered essential for an educated man to speak Latin, and no longer should it be necessary for us to make this pretense at a knowledge so few of us possess. For the reasons given, prescriptions in English have become accepted as the preferred form in THE JOURNAL, and will be employed in this series of articles.

THE METRIC SYSTEM

It seems time that the binominal system of weights and measures, with which we are at present burdened in this country, be abolished. Familiarity with one system is all that is desirable, required or possible for most of us. To force acquaintance with two systems on our medical students is confusing and wasteful of precious time, and it generally results in inefficiency in both. We should either take the self-sufficient attitude of our British confrères, who largely continue to use the old system of weights and measures, even though

* This is the first of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

1. Fantus, Bernard: Prescriptions in English, J. A. M. A. **66**: 1696 (May 27) 1916.

2. Fantus, Bernard: What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics? Quart. Fed. State M. Bds., 1914, p. 293.

the rest of the entire civilized world has accepted the admittedly better metric system; or else we should abandon the old system for the new. To step backward to the old system is too late now, when the U. S. Pharmacopeia and the National Formulary and the publications of most of the scientific and governmental bodies have accepted the metric system, and when the recent graduates of most of our better medical schools are much more familiar with the metric than with the old system. It is therefore desirable for all to assist the old system into its well deserved oblivion by adopting the new. In the present series, the metric system will be used exclusively, except that hints will be introduced in appropriate places to show how easily those familiar with the old system may reform and employ the new, thereby helping to free us from another incubus of the past.

The fact that the tenth edition of the Pharmacopeia has just been published, becoming official, Jan. 1, 1926, makes it opportune to take cognizance in these articles of the changes that have taken place and to give, whenever it seems necessary, the reason for them. Opportunity will also be afforded to touch on some of the more important preparations of the National Formulary, the fifth edition (N. F. V) of which is just being published, and will become official, July 1, 1926. It has been said that the best way to kill the popularity of a proprietary preparation is to make it official. The kernel of truth in this no doubt facetious assertion might lie in the fact that it generally does not pay to advertise official preparations; therefore any popularity exclusively due to advertising soon dies down with the cessation of the advertising campaign. Unfortunately, however, even meritorious preparations are in danger of languishing in neglect merely because of lack of publicity, unless attention is called to them from time to time; this these articles will aim to do for the present. In this connection it might be well to emphasize the difference in scope of the U. S. Pharmacopeia and the National Formulary. An attempt has been made—more strenuously in the recent revisions than ever before—to withhold pharmacopeial recognition from any except useful drugs and preparations. A strong tendency has also been manifested to delete complex preparations from the Pharmacopeia. This does not mean, however, that all extrapharmacopeial preparations are useless or that complexity necessarily means unscientific composition. The National Formulary, on the other hand, aims to include those formulas for nonpharmacopeial preparations that are in extensive use in this country. It is altogether unreasonable to assume that many or even most of these extensively used preparations are useless. An attempt will be made to select from among the many formulas of the National Formulary some of those that seem most deserving of continued use. While, for efficient medication, acquaintance with the Pharmacopeia might suffice, he who aims at elegance as well would lose by not studying the National Formulary.

Local Versus General Treatment

Other things being equal, the physician who has the best command over the various methods of administration will be the most successful in the use of medicines; for it is not only what medicine is given but also how it is given that may determine the difference between success and failure. Obviously, the physician must be familiar with all the methods of introducing remedies into the body; for, though the most direct channel to reach the seat of the disease is the best, in the diversified conditions of medical practice any one channel for the administration of remedies may become unavailable—as, for example, the alimentary tract in case of vomiting or purging—and the resourceful physician must have other means of introducing the required remedy.

It must always be clear in the mind of the prescriber whether local action (i. e., action at the point of application) or systemic action (also spoken of as internal or general action, which occurs after absorption) is desired. For, local action is generally in inverse proportion to the degree of general action, and one has means of regulating the amount of absorption, and hence the degree of local and of general effect.

Frequently the most direct channel to the seat of disease is by internal administration, even though the affection is localized. For, once the remedy has passed beneath the surface, it finds itself in the blood and lymph stream, which carries it to all the organs of the body; so that the diseased part, unless it is limited to the surface, does not get any direct benefit from the topical application of a drug, except through modifications of the blood and nerve supply. Nevertheless, it is often well to order topical applications, in addition to internal treatment; for topical treatment may procure rest, support and compression, as when we apply a plaster; it may soothe and relax the part, as is done by warm compresses; it may, in the form of a cooling application, lessen the blood supply and the sensitiveness of a part, or it may, by the induction of hyperemia, favor reparative processes in the affected tissue as well as increase the extent to which the diseased cells are subjected to the action of a remedy brought to them by the circulation. When we increase the blood perfusion of a part to two, three or more times the normal, we obviously increase the access of a blood borne remedy in that proportion. Finally, it is good policy to prescribe topical treatment; for people commonly are so ignorant of the facts of the circulation that they cannot understand how a medicine taken by mouth can help, for example, a pain in the heel. If the physician neglects to prescribe local treatment, often some one else will and may do so unwisely. Thus, people ignorantly rub parts that require absolute rest, as in thrombosis of veins, and do harm, even to the extent of causing embolism.

Mode of Action of Topical Applications

The disrepute and neglect of topical treatment in modern medical circles is, to a certain extent, historic; it is due to false theories that were formerly resorted to for explaining the clinical benefit derived from these measures, used by humanity from time immemorial. In the days of humoral pathology, the benefit derived from topical applications was ascribed to a drawing of morbid juices away from the affected part and into and through the surface. This led to the heroic forms of counterirritation that were so popular during the dark ages of medicine. Large blisters were applied quite generally; and, when these did not suffice to "draw out" the disease, strong irritants were rubbed into the raw surface to make it "discharge hugely." Though, with the advent of cellular pathology and a better knowledge of the facts of the circulation, it became obvious that it was impossible to "draw out" disease by these means, many of the laity—a consider-

able proportion of which always is centuries behind the medical profession in point of view—still believe in the "drawing out" process.

No sooner had the ancient theory been thrown into the discard than a new theory was advanced to explain the indubitable benefit of counterirritation, i. e., the setting up of irritation in a healthy part for the benefit of morbid processes going on elsewhere. The Dastre-Morat law of antagonism, which postulates that hyperemia of the surface is accompanied by a diminution in the deep blood supply, was seized on. It was taught that the excess of blood in the diseased part was harmful and that this was diminished in the deep tissues when superficial hyperemia was induced.

The fallacy of this theory was exposed chiefly by the surgeon August Bier, who proved that localized hyperemia of the surface induces hyperemia of the depth even down to the bone, thus disproving the validity of the law of antagonism for local applications, though this law holds for extensive applications to the surface of the body. Bier also showed that hyperemia is not detrimental, but remedial. Blood brings to the part materials for repair, which are obviously needed in greater quantities by diseased than by normal tissues; and it brings antibacterial forces to bear on a focus of infection. Bier believes and shows not only that the pain of inflammation is not due to hyperemia, but that hyperemia actually has an analgesic action.

We must admit, however, that the production of hyperemia does not entirely explain the benefit obtained by counterirritation. Thus, mustard plasters applied to the epigastrium sometimes stop vomiting. To obtain such effects it is necessary that the application be made over certain particular areas, which in every case are found to have innervational relation with the affected part by being supplied from the same segment of the central nervous system. In consequence, deep irritation often produces an increased irritability of superficial nerve endings (Head's zones of hyperesthesia); sometimes it benumbs them, so that a very hot application may feel too hot elsewhere while just comfortable over the area connected by segmental innervation with the seat of disease. In the same manner, a severe irritation in the superficial expansion of a spinal cord segment may lessen the irritability of the deep part, or an analgesic application may relieve a deep pain.

Of late, the additional theory has been advanced that the tissue disintegration products given off in increased quantity from the irritated tissue exert a general tissue activating effect similar to the one assumed to be produced by nonspecific proteotherapy.

Finally, we must not lose sight of the fact that people have faith in local treatment, that it appeals to their imagination and that—just to this extent—it carries with it psychotherapeutic potency. From all these considerations may be coined the therapeutic maxim, Use appropriate topical treatment in all conditions in which it is justifiable.

CONTRAINDICATIONS TO TOPICAL TREATMENT

Topical treatment is likely to be an error in case of purely psychic disturbance. The very fact that treatment is addressed to the complaining part serves as a potent suggestion to the sufferer that there is disease in the part in which the suffering is felt. In such cases, the fixation of attention on the part may increase its sensitiveness and the distress. Here the therapeutic strategem of topical neglect is indicated; which means paying no attention whatever to the complaining part, while displaying solicitous care for the patient's general welfare. Thus we may succeed in impressing on the patient's mind the fact that there is no disease at the seat of complaint and lessen the focal nervous irritability that maintains it.

It is bad policy to apply any active topical treatment to areas in which in the natural course of events destruction or other marked lesions are liable to develop. Thus, when gangrene is imminent in a part, any application that happened to be used is likely to be blamed for the bad result. Indeed, parts very poorly supplied with blood are damaged by physical or chemical influences that may be beneficial in more normally perfused tissue. Hence we must avoid extremes of heat or cold or powerful chemical influences in all conditions in which gangrene is threatened.

Attention must also be called to the possibility of injurious combined effects of roentgen rays or radon (radium emanation) and of topical remedies. Mackee and Andrews [3] call attention to the fact that small doses of roentgen rays or of radon combined with topical irritants in strength may result in severe injury. Large, but safe, doses of roentgen rays or radon, combined with mild topical irritants, may give the same result. Intensive and reactive irradiation, with topical irritants in strength, is the combination most likely to be injurious. Hypersensitiveness is very marked immediately subsequent to a single intensive dose of roentgen rays or radon. The authors believe that the return to normal is very slow and that, even in the absence of visible reaction (erythema) or of permanent injury, the skin may not react normally to topical remedies for a month. If there has been a first degree radiodermatitis, manifested by erythema, but no permanent injury, the skin is likely to remain hypersensitive even for two or three months subsequent to the treatment. If there is permanent injury, as evidenced by telangiectasia, atrophy or scarring, the skin may remain hypersensitive for months and even years. Likewise, any agent capable of effecting an inflammatory reaction in the skin may make the latter more susceptible to irradiation. Chrysarobin, scarlet R medicinal, iodine, mercury, pyrogallic acid, cantharides, resorcinol, betanaphthol, tar, iodoform, sulphur, salicylic acid and other remedies of this type cause such hypersensitiveness of the skin. They produce the least trouble when used as powders; they are more potent in the form of ointments.

APPLICATIONS TO THE SKIN

In planning applications for the skin, it must be clear in our mind whether we desire epidermic action (action on the surface), endermic action (effect on the derma) or diadermic action (effect after absorption into the blood stream).

As one of the most important functions of the skin is protection of the body, this tissue offers considerable resistance to the penetration of medicaments. Being covered with a layer of dead keratinized cells and coated with a fatty substance, the sebum, the protection afforded by it is most efficient against watery solutions of nonvolatile substances, which are not at all absorbed by the unbroken skin. By means of the electric current, even nonvolatile substances in aqueous solution

3. Mackee, G. M., and Andrews, G. C.: Injurious Combined Effect of Roentgen Rays and Radium and Topical Remedies, J. A. M. A. 77: 1489 (Nov. 5) 1921.

may be forced through the protecting layers of the skin. This process is known as phoresis, or cataphoresis. The quantity that can be thus introduced is, however, so small and is so rapidly carried away by the blood current after absorption that the method has not been used with much success. Watery liquids, therefore, should be applied to the skin only when action on the surface merely (epidermic action) is desired. When it is intended to kill micro-organisms or other parasites on the skin or inhibit their growth, watery solutions are useful, as they produce a maximum effect on the parasite with a minimum of action on the structures beneath. When vessels or nerve endings of the skin are to be affected (endermic action), or absorption into the system (diadermic action) is aimed at, penetration through the fatty and the horny layers is required. This can be attained by the use of agents that mix with fat, such as ointments; or by the application of volatile substances, such as are contained in many liniments. Penetration of these agents may be favored by thorough preliminary cleansing with soap and water, by friction, by heat and by occlusive dressings. As under these circumstances, a certain amount of absorption into the system takes place, we must guard against poisoning from potent applications by not making them too strong, too extensive or too prolonged.

Once the dead horny layer of the skin has been removed or its continuity interrupted, the absorptive function of the skin and its relation to medicaments approximate those of the mucous membranes. Hence, abraded, excoriated and ulcerated surfaces of the skin must be treated like mucous membranes and not like skin. Applications that would be harmless when used on the unbroken skin may become poisonous when made on raw surfaces.

DERMAL ADMINISTRATION FORMS

Owing to the ease with which the skin is subjected to physical influences, it often makes a great deal of difference whether the remedy is applied as ointment, paste, powder or shake mixture. The degree of penetration is likewise of decisive practical importance as, to be successful, the effect of the remedy must penetrate as far into the depth as the disease extends.

The reason for varying degrees of penetration lies partly in the fact that maceration of the skin favors absorption. Dry skin is most impermeable. Hence, dusting powders penetrate least. Softening of the layers of the epidermis increases the size of the interstices between the cells, and thus permits access and penetration. Hence, a moist dressing (compress) that causes maximal maceration of the skin, when permitted to remain in place for a sufficient length of time, favors penetration, especially when the application is made and kept hot.

Fatty substances favor penetration partly by preventing evaporation of sweat, thus leading to maceration and softening of the skin, and partly because they are mixable with the fatty secretion of the sebaceous glands through which a certain degree of absorption is possible. Friction, by forcing material into the sebaceous ducts, obviously favors penetration.

As volatile and fat dissolving (lipophil) bodies are capable of penetrating the epidermis to a considerable extent, liniments and other applications containing such materials possess a greater degree of penetration than nonvolatile and water soluble (hydrophil) bodies.

Applications to the skin will be discussed somewhat according to depth of action, as follows:

I. Dusting powders.
II. Nonabsorbent films.
III. Lotions.
IV. Liniments.
V. Medicated pigments and pencils.
VI. Salves, including pastes, cerates, and ointments.

The classification given must not be considered as otherwise than of general guidance, because the individuality of the medicament may easily upset the sequence. The solubility of the active agent may favor or hinder penetration. For instance, phenol (carbolic acid) in aqueous medium attacks the fatty skin surface much more eagerly—because it is more soluble in fat than in water—than when phenol is applied in fatty medium. Irritating qualities of an agent will increase the degree of its absorption by the production of hyperemia.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1925, p. 353).

The Cutter Laboratory, Berkeley, Calif.

Special Pertussis Vaccine.—Marketed in packages of one 5 cc. vial containing 5,000 million killed pertussis bacilli per cubic centimeter.

QUININE SULPHATE (See New and Nonofficial Remedies, 1925, p. 301).

The following dosage form has been accepted:

Coco-Quinine: Each 100 cc. contains quinine sulphate, 2.19 Gm. (10 grains per fluidounce), suspended in a syrup flavored with chocolate, yerba santa and vanillin, and containing sodium benzoate, 0.18 Gm. per 100 cc. and alcohol, 4 per cent.

Prepared by Eli Lilly & Co., Indianapolis. U. S. trademark 174,144.

CONCENTRATED CULTURE OF BACILLUS ACIDOPHILUS-P. D. L.—A milk culture of *Bacillus acidophilus* supplied in vials containing ? cc. It contains not less than 300 million viable organisms (*B. acidophilus*) per cubic centimeter at the time of sale.

Actions and Uses.—See Lactic Acid-Producing Organisms and Preparations (New and Nonofficial Remedies, 1925, p. 191).

Dosage.—The contents of one vial (8 cc.) daily. The culture is sent the patient weekly on the prescription of the physician. Each package bears an expiration date after which the culture should not be used.

Manufactured by the Physicians Diagnostic Laboratories, Berkeley, Calif. No U. S. patent or trademark.

Fluoroscopy Aid in Diagnosis of Cancer of Stomach.—I have seen a number of cases in which the most careful abdominal palpation failed to reveal any tumor, but on repeating the examination under the roentgen-ray screen, when the stomach was visualized, it has been possible to recognize a thickening where an irregularity in outline or an abnormality in peristalsis was observed; the method of combined radiography and palpation, which should be carried out by the clinician and not by the radiologist because of the necessary exposure of the hands to the rays, may, therefore, be of great value when neither method alone has led to any conclusive result.—Hurst, A. F.: *Guy's Hosp. Rep.* **75**:402 (Oct.) 1925.

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SATURDAY, JANUARY 2, 1926

DILATATION AND HYPERTROPHY OF THE HEART

The results of various mechanical changes produced by injury or disease in the circulatory apparatus are frequently overcome, so that the blood flow is maintained in a fairly normal manner. Among the agencies that may accomplish such readjustments, the hypertrophy of the heart muscle and the compensatory dilatation of the cardiac chambers are prominent. The compensatory hypertrophy is not always extended to include the entire heart; it may involve only the musculature of an individual heart compartment, if circumstances demand this. The details of the development of such adjustments are by no means well understood. Like a skeletal muscle, the cardiac musculature tends to increase in the size of its component fibers and in the contractile capacity of the organ, when it is subjected to more work than usual.

Additional light has been thrown on these readjustments by the investigations of Holman and Beck [1] of Western Reserve University, Cleveland. These investigators produced experimental abnormalities in the heart so as to direct the major stream of circulating blood through certain chambers and their corresponding vessels, the rest of the heart receiving a smaller volume of blood. Among the methods employed was the puncture of the septum, so that a patent orifice remained between the ventricles. In this way the blood was largely deflected, for example, from the systemic circulation and diverted in larger volume to the shorter pulmonary circuit. Under such circumstances there arises a gradual enlargement of the heart limited to that part of the circulatory system through which the deflected blood passes; namely, the left ventricle, the right ventricle, the pulmonary artery, and the left auricle. There is also a demonstrable hypertrophy of both ventricles, presumably the result of the increased effort necessary to propel forward an increased volume flow of blood, since it cannot be attributed to increased peripheral resistance. Immediately after the production of the defect, the right auricle and aorta become smaller than usual, conforming in size to the decreased flow of blood through them. As full compensation for the deflected flow occurs by an increase in total blood volume, they return to their normal size. Without such compensation they may remain smaller than normal.

It thus appears that heart and blood vessels place themselves in harmony with an increased volume flow of blood through them, the former by dilatation and hypertrophy, and the latter by dilatation. The Cleveland surgeons suggest that enlargement of the heart seen clinically in so-called idiopathic hypertrophy, essential hypertension, and also in certain cases of cardiorenal disease, may be due to an increase in total blood mass following some interference with the mechanism for its control. These experiments show that the size of the heart is commensurate with the volume flow of blood through it, whether the latter is altered by massive blood letting, by massive transfusion, or by a redistribution of the normal blood volume. The rate of the cardiac contractions alone cannot be considered responsible for the variations in size. According to Holman and Beck, the seat of the impairment in blood volume control may be in a chemical alteration of the blood; in a diseased function of the kidneys responsible in turn for decreased elimination or for a change in the composition of the circulating fluid; or in an abnormal stimulation of the organs producing the cellular elements of the blood. Both hypertrophy and dilatation are responsible for cardiac enlargement; and, as Holman and Beck point out, it is not unlikely that, when dilatation outstrips hypertrophy, decompensation ensues.

1. Holman, E., and Beck, C. S.: The Physiological Responses of the Circulation to Experimental Alterations, I, The Effect of Intracardiac Fistulae; II, The Effect of Variations in Total Blood Volume, J. Exper. Med. **42**: 681 (Nov.) 1925.

THE PROBLEM OF RHEUMATIC FEVER

Few diseases have been more difficult to define accurately than rheumatic fever; few have been the subject of more complicated theories. The exclusively physical and chemical hypotheses once advanced to explain the onset of acute rheumatism have given way to an assumption of a biologic etiology. Suggestions of sensory nerve irritation and consequent distant nervous complications due to the direct action of cold, or the proposition that uric acid in the blood will explain the symptoms, no longer concern us. Rheumatic fever is at present regarded as an infection with a great variety of manifestations. An expert student has pointed out that some of these are short in duration and apparently inflict little injury on the tissues of the patient; others pursue a chronic persistent course from the onset, with evidence of deep-seated injury to the affected organs, and still others exhibit alternate periods of activity and latency. These pre-

sent sufficient variables to permit all sorts of speculation regarding the protean aspects of rheumatic fever.

Bearing in mind that the etiologic agent of rheumatic fever has not been demonstrated conclusively and that it has not yet been possible to reproduce in experimental animals the characteristic clinical or histopathologic picture of the disease, Swift [1] of the Hospital of the Rockefeller Institute has attempted to consider the problem with the attitude that characterized students of tuberculosis before its cause was accurately ascertained. He points out that if phthisis or scrofula were the only tuberculous manifestation recognized by us, we should miss many important features of tuberculosis; so in the consideration of only arthritis and endocarditis, we obtain an incomplete picture of rheumatic fever. One should consider that in the latter, as in certain other infectious processes, there may be a development of an immunity or an allergy to the infectious agent. This is recognized as an effort on the part of the body to restrict the activities of the virus to smaller and smaller areas. In tuberculosis, Swift notes, this allergy is manifested in adults by a greater frequency of chronic tuberculosis of the lung. In rheumatic fever a similar tendency may be seen in the development of more frequent and severe joint lesions in adults than in children and possibly by a tendency to the development of chronic arthritis.

What is now known regarding the clinical and histopathologic features of rheumatic fever points to two general types of response on the part of the body to the invasion of the causative agent of the disease; namely, proliferative and exudative. These are not equally responsive to the same therapeutic procedures. The exudative symptoms may abate in consequence of the exhibition of certain drugs; yet symptoms of chorea may persist and the development of valvular changes may continue in patients receiving full therapeutic doses of salicylates or comparable substances. Hence there are various manifestations to be kept in mind in considering the problem of therapy. The often neglected maintenance of good nutrition is proving to be an effective aid in overcoming the ravages of the disease, as has been found true in other types of infection.

The elimination of symptoms does not always mean the eradication of the disease; there are many desirable aims of therapeusis that are asymptomatic. Our ignorance calls for conservative and extensive measures that shall comprise the various possibilities. Swift wisely points out that the successful warfare against tuberculosis has been based, not only on the destruction of the tubercle bacillus, but also on a recognition of the chronic nature of the infection and the application of suitable measures to enable the patient to combat that type. Accordingly, Swift regards as the most important phase of treatment of rheumatic fever the length of time necessary to keep patients quiet. It should be "as long as signs of infection persist." This presents a formidable program for the cases that require institutional care, for it involves a period of enforced proper rest longer than is usually recognized. Perhaps, Swift muses, the time may come when the tuberculosis problem has been completely solved and the sanatoriums will be converted into hospitals for the treatment of patients with rheumatic hearts; but before that time, provision should be made for the proper care of a large group of these persons. A few heart hospitals where proper study of these problems could be both intensively and extensively carried out, Swift concludes, would do much toward formulating a definite plan in the treatment of a condition that has experienced little permanent benefit from the methods now in vogue.

1. Swift, H. F.: Rheumatic Fever, Am. J. M. Sc. **170**: 631 (Nov.) 1925.

URINARY CHANGES DURING SEVERE EXERCISE

Theories of muscular contraction have undergone marked revision during the last few years.[1] Chemistry and energetics have contributed new points of view. The muscle is now most frequently pictured as a chemical machine rather than a heat engine. During the contraction of a muscle some of its carbohydrate, glycogen, is converted into lactic acid. Presently the lactic acid disappears. According to Meyerhof, some of it is destroyed by oxidation, while the rest is reconverted into muscle carbohydrate.

There are reasons for believing that phosphates play some part in the metabolism of sugars in the body. Among the explanations is the suggestion that hexose phosphoric acid is an intermediate product in the disintegration of sugar. It is believed that such "phosphated glucose" can be used in the organism, whereas other forms of carbohydrate are not equally available. The details of the various reactions and their true significance are far from being well established. It might be expected, however, that when the muscles perform vigorously, some of the intermediary products that arise are not otherwise taken care of with sufficient speed to prevent them from accumulating in the blood to a concentration in which the kidneys eliminate them in the effort to maintain the normal make-up of the circulating medium. Indeed, Barr [2] and his co-workers have strikingly demonstrated the relatively great variations in the reaction of the

1. Hill, A. V.: Muscular Activity and Carbohydrate Metabolism, Science **60**: 505 (Dec. 5) 1924. When a Muscle Contracts, editorial, J. A. M. A. **84**: 442 (Feb. 7) 1925; The Food and Fuel of Athletes, ibid. **84**: 2004 (June 27) 1925.

2. Barr, D. P.; Himwick, H. E., and Green, R. P.: Studies in the Physiology of Muscular Exercise, I, Changes in Acid-Base Equilibrium Following Short Periods of Vigorous Muscular Exercise, J. Biol. Chem. **55**: 495, 1923. Barr, D. P., and Himwick, H. E.: II, Comparison of Arterial and Venous Blood Following Vigorous Exercise, ibid., p. 525; III, Development and Duration of Changes in Acid-Base Equilibrium, ibid., p. 539.

blood brought about by short periods of strenuous exercise.

Despite the fact that the body can dispose of large quantities of lactic acid with great metabolic facility, Liljestrand and Wilson [3] of the University of Pennsylvania School of Medicine have been able to demonstrate the excretion of lactic acid in the urine after even brief periods of very strenuous exercise. Thus, the concentration of lactic acid in the normal urines ranged from 6 to 21 mg. per hundred cubic centimeters. After exercise, the maximum concentration varied from 700 to 1,840 mg. per hundred cubic centimeters. In some of these urines the concentration of lactate may have been higher than any other solid component of the urine. In the same laboratory [4] it was demonstrated that, following exercise, there is a decrease in urine volume, and an increase in hydrogen ion concentration and in acid and ammonia excretion. The elimination of phosphates rose while that of chlorides fell. This harmonizes with the evidence, obtained from experiments on isolated muscles, that the increased excretion of phosphate is due to the liberation of phosphoric acid in the active muscle and its diffusion into the blood stream and thence into the urine. As the Philadelphia biochemists point out, the relationship between the changes in the composition of the urine and the composition of the blood, which may be inferred from the correlations mentioned above, demonstrates how rapidly and efficiently the kidney responds to assist in the regulation of the neutrality and osmotic pressure in the body.

THE REGULATION OF BILE FLOW

Two significant facts, among others, have contributed to the uncertainty regarding the regulation of the flow of bile: (1) The gallbladder, which has often been assumed to bear some relation to this function, can be removed without untoward effects; and, (2) there are species of animals in which the biliary flow proceeds without reference to any reservoir, since this is normally lacking in them. These circumstances have placed a large burden of participation on the sphincter at the duodenal end of the common bile duct, so far as the discharge of the hepatic secretion into the intestine is concerned. Ever since the description of the sphincter of Oddi, there has been uncertainty as to its influence in the adjustment of biliary flow. This uncertainty is due in part to the indefiniteness of knowledge regarding the anatomy of the structures involved. Even the existence of a distinct anatomic sphincter has been debated. Mann [5] believes, however, that the evidence is sufficient to permit the conclusion that there is a bundle of muscle surrounding the end of the common bile duct, which could act as a sphincter. It is often difficult to find muscle fibers that encompass the duct exclusively, because they are closely intermingled with the circular fibers of the intestine, and in many instances there are few muscle fibers that might act exclusively as a sphincter. In certain instances, what would appear to be the sphincter is only an accentuation of the muscle coat in the intramural portion of the duct over that of the extramural portion, by the addition of fibers from the circular coat of the duodenum. Often the interlacing of the muscle fibers passing around the duct and the muscle fibers of the duodenum is so intimate that it is hard to imagine a separate action of the two groups of fibers. Usually, however, according to Mann, there are definite bundles of muscle that are distinct enough to be considered as a sphincter.

The fact that bile may pass into the intestine intermittently rather than continuously is well established. One explanation of this attributes the intermittence of discharge to the successive relaxation and renewed tonicity of the sphincter of Oddi. Burget [6] of the University of Oregon Medical School is inclined to stress the influence of the tonus of the intestine itself as a dominant influence in resisting continuous outflow from the common bile duct. The common bile duct passes through the intestine in an oblique manner. The mouth of the duct thus lies below the point at which it makes initial entrance into the wall of the intestine. As a physical arrangement, Burget points out, this would constitute an efficient sphincter-like mechanism, depending on the tonicity of the intestine. The duct within the intestinal wall is subject to collapse and consequently would offer a resistance to the passage of fluid in proportion to the state of tonicity of the intestinal musculature.

Burget further reminds us that no great tonicity of the duodenum is necessary to close the small lumen of the duct. The normal tonus is no doubt sufficient to prevent a continuous flow when the gallbladder is present. When the pressure is high enough to overcome this resistance, the bile flows into the intestine. The increased mechanical pressure on the filled gallbladder brought about by inspiration may easily be conceived to cause bile to spurt into the intestine, irrespective of considerable tonus in the duodenum. Coupled with this is the peristalsis of the duodenum in digestion, which invariably causes a flow when there is a moderate pressure in the duct. This is brought about partly by a milking action on the duct and probably partly by aspiration due to reduced pressure in the duodenum following the peristaltic wave. Hence, Burget believes, the function of the sphincter of Oddi has been overemphasized, and not

3. Liljestrand, S. H., and Wilson, D. W.: The Excretion of Lactic Acid in the Urine After Muscular Exercise, J. Biol. Chem. **65**: 773 (Oct.) 1925.

4. Wilson, D. W.; Long, W. L.; Thompson, H. C., and Thurlow, S.: Changes in the Composition of the Urine After Muscular Exercise, J. Biol. Chem. **65**: 755 (Oct.) 1925.

5. Mann, F. C.: The Functions of the Gall Bladder, Physiol. Rev. **4**: 251 (April) 1924.

6. Burget, G. E.: The Regulation of the Flow of Bile, Am. J. Physiol. **74**: 583 (Nov.) 1925.

enough attention has been given to the tonicity of the intestine in attempting to measure the resistance of this sphincter. The possible justification for this hypothesis is a matter of no small moment to the surgeon who is called on to interfere with the normal integrity of the biliary tract.

Current Comment

METABOLISM OF NERVE FIBER

Metabolism in nerve fibers, whether at rest or during functional activity, has long interested physiologists. Our ideas of cell function in general are linked with combustion, consumption of oxygen, giving off of carbon dioxide, and fatigue. Nerve tissue, however, has given but slight evidence of these properties. Bowditch, in 1885, found that induction shocks might be conducted over the sciatic nerve for several hours without complete fatigue;[1] and the generally accepted conclusion has been that medullated fibers[2] under normal conditions show no fatigue. Neither Rolleston nor Hill[3] was able to demonstrate any of the heat production that would be expected if combustion were taking place. Nevertheless, the consumption of oxygen by nerve tissue seemed a certainty when it was learned that nerves lose their irritability in an atmosphere deprived of oxygen, and Tashiro, in 1913, seemed to have established the other side of the oxidation process, when he reported production of carbon dioxide by a nerve during functional activity. Since the amounts of carbon dioxide discovered were so small as not to exclude the possibility of their having been dissolved in the tissues,[3] the world has awaited confirmation of Tashiro's evidence. Recently, however, Parker,[4] using the lateral-line nerve of the dogfish, which is a purely sensory, medullated nerve, has shown that one nerve can excrete as much as 0.017562 mg. of carbon dioxide, which is computed to equal 0.000000042 mg. from 1 cm. of nerve fiber in one minute. Possibly certain clinical symptoms may yet be found to be due to nerve fatigue, and neurasthenia become a well established clinical pathologic entity.

INCOME TAX RETURNS

Congress is rewriting the present income tax law. A new law will probably be enacted at an early date and modify materially the returns required to be filed between January 1 and March 15. Physicians are advised, therefore, to postpone making returns until after the anticipated modifications are known. After the enactment of the new law, ample time for filing returns will presumably be available. If it seems likely that this will not be the case, THE JOURNAL will give due notice.

1. Howell, W. H.: Text Book of Physiology, Ed. 9, 1924, p. 118.
2. Starling, E. H.: Principles of Human Physiology, Ed. 3, p. 285.
3. Bayliss, W. M.: Principles of General Physiology, Ed. 4, 1924, p. 378.
4. Parker, J. H.: The Carbon Dioxide Excreted in One Minute by One Centimeter of Nerve Fiber, J. Gen. Physiol. **9**: 191 (Nov. 20) 1925.

Association News

THE DALLAS SESSION

Hotel Accommodations

Dr. E. H. Cary, chairman of the Local Committee of Arrangements for the Seventy-Seventh Annual Session of the American Medical Association, to be held in Dallas, Texas, April 19-23, has submitted the following list of the leading hotels of Dallas, together with the rates for rooms. In writing for hotel reservations, it is desirable that each Fellow shall state in his letter to the hotel whether a single or double room is desired, whether a room with or without a bath is wanted, and, if possible, the time of expected arrival in Dallas and the length of time hotel accommodations will be wanted.

Leading Hotels at Dallas

Name and Address	No. of Rooms	Single		Double	
		Without Bath	With Bath	Without Bath	With Bath
Adolphus Hotel Commerce and Akard	825	$1.50 -3.50	$2.50 -6.00	$3.00 -6.00	$5.00 -8.00
Baker Hotel Commerce and Akard	700	....	$3.00 -5.00	....	$4.50 -7.00
Jefferson Hotel Wood and Jefferson	450	$1.50 -2.50	$2.50 -4.00	$3.00 -4.00	$4.00 -8.00
Southland Hotel Main and Murphy	250	$1.50 -2.00	$2.50 -3.00	$3.00 -4.00	$4.00 -5.00
Hilton Hotel Main and Harwood	320	$1.50 -1.75	$2.00 -3.00	$2.75 up	$3.00 -5.00
Scott Hotel Houston and Jackson	100	....	$2.00 -2.50	....	$3.00 -3.50
St. George Hotel 1012 Main	150	$1.00	$2.00	$2.00	$4.00
Waldorf Hotel 1207 Commerce	150	$1.00 -1.50	$2.00 -2.50	$2.50	$4.00 .....
Park Hotel 1312 S. Ervay	175	$1.00 -1.50	$2.00 -2.50	$2.00 up	$2.50 -3.50
Campbell House Elm and Harwood	108	$1.25 -1.50	$2.00	$2.50	$3.50 -4.00
Milam Hotel 2013 Main	60	$1.50	$1.75 -2.50	$2.50	$2.75 -3.00
Cliff Hotel 201 E. Jefferson	147	$1.00 -1.50	$2.00	$1.50	$3.00
Texan Hotel 212 S. Houston	54	$1.50	$2.00	$2.00	$2.50
Apartment and Family Hotels					
Stoneleigh Court Apts. 2927 Maple Avenue	405	.....	$4.00	.....	$6.00
Melrose Court Apts. 2015 Oak Lawn Avenue	450	.....	$3.50	.....	$5.00
Oak Lawn Inn. 3.02 Cedar Springs	58	$1.00	.....	$2.50	.....
Maple Terrace Apts. 3002 Maple Avenue	400	.....	$3.00	.....	$5.00

Hotel Reservations for Members of the House of Delegates

In compliance with instructions given by the House of Delegates, tentative reservations have been made at the Baker Hotel, Dallas, so that each member of the House may be assured of a room at that hotel. The names of all delegates, as far as they are known at the present time, have been sent to the management of the hotel, and letters have gone out to all delegates requesting them to write direct to the Baker Hotel asking for the reservation of such accommodations as may be desired. In writing, delegates should be careful to specify that the accommodations desired are to be provided from the allotment of rooms tentatively reserved for members of the House of Delegates. Reservations should be made at the earliest possible time. If for any reason a delegate does not wish to have accommodations at the Baker Hotel, he should notify the Secretary of the Association as soon as possible in order that reservations tentatively made and not required may be released for the accommodation of other members of the Association.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Physicians Cited.—Dr. Charles B. Pinkham, secretary, state board of medical examiners, writes that the following physicians have been cited to appear at the next regular meeting of the board to be held in Los Angeles, March 9, 1926:

William S. Fowler, M.D., based on his plea of guilty to a charge of violating the state medical act.

William A. Strole, M.D., based on his plea of guilty to a charge of violating the Harrison Narcotic Act.

Ernest Harold King, M.D., based on violating subdivision 10 of section 14, advertisement and treatment of venereal disease.

Chinese Hospital Opened.—The first Chinese hospital in San Francisco, representing an expenditure of more than $250,000, was recently opened. The need for a Chinese hospital became apparent in 1918, when under the leadership of the Chinese Six Companies and others, fifteen different organizations set about to raise funds. The building is five stories high, of concrete construction, and in equipment is among the best in the West. The medical profession has cooperated in forming a staff, the four divisions of which are presided over by American educated Chinese physicians, who make up the executive committee of the staff. The wards will administer especially to the poor, but also to pay patients. There is a free clinic. The regulations for the organization of the board of directors and the staff are adapted to serve the special needs of this hospital.

DISTRICT OF COLUMBIA

Certified Oysters.—An amendment to the District health regulations which affects oysters will be put into effect by the commissioners. The health officer was advised by the state food and drug commissioner of Maryland that certain firms conducting shellfish establishments in Maryland are shipping into the District oysters under sanitary conditions not approved by the Maryland state health authorities. Dr. William C. Fowler, district health officer, pointed out in a memorandum to the commissioners that last year a conference was held by the Surgeon General of the Public Health Service with state representatives, at which an agreement was reached whereby all oyster-producing states would issue regulations for the safe conduct of the shellfish industry. Dr. Fowler said:

> From information reaching the health department, it appears that certificates are being issued by the proper state authorities to all concerned in conducting shellfish establishments in their particular state in a manner satisfactory to the authorities. In cases where proper sanitary safeguards are not employed, certificates are refused. As the health department of the District of Columbia has not means of its own of determining whether oysters are being handled in a safe manner at the plants where they are shipped, it must depend on the certificate of the proper state authorities for such information. It seems to me, therefore, that no oyster or other shellfish should be permitted to be offered for sale or sold in the District of Columbia unless evidence is at hand to show that these marine products are safe for human consumption.

The regulations as adopted by the commissioners, and which become effective after thirty days, reads: "No shellfish shall be offered for sale or sold in the District of Columbia that are not obtained from sources approved by the health officer of said District. Any person violating the provision of this regulation shall, on conviction thereof, be punished by a fine of not more than $40 for each and every offense."

GEORGIA

Hospital News.—Drs. George L. and George H. Alexander have established a hospital in Forsyth.——A complete roentgen-ray unit has been installed in the Savannah Hospital.——The Baptist Hospital, Atlanta, recently broke ground for a new $500,000 addition.

Society News.—Dr. Albert Keidel, associate professor of clinical medicine, Johns Hopkins University Medical School, Baltimore, addressed the Fulton County Medical Society, Dec. 9, 1925, under the auspices of the Piedmont Hospital Clinical Society on "The Present Status of the Treatment of Syphilis."

Dr. Wade Found Not Guilty.—A jury in the federal court at Augusta, Dec. 2, 1925, returned a verdict of not guilty in the case of Dr. Arthur C. Wade, who had been charged with violation of the Harrison Narcotic Law. The jury, it is reported, was out a short time (THE JOURNAL, Feb. 28, 1925, p. 681).

ILLINOIS

Society News.—Dr. Otto H. Schwarz, Washington University School of Medicine, St. Louis, addressed the Sangamon County Medical Society, Springfield, Dec. 3, 1925, on "Puerperal Infection: Its Bacteriology and Treatment," and Dr. Edward Lee Dorsett, St. Louis, on "Conservative Treatment of Eclampsia, with Especial Reference to the Use of Magnesium Sulphate to Control Convulsions."

Chiropractors Move On.—It is reported that H. F. Kovski, chiropractor of Athens, having been prosecuted and fined $100 for violating the medical practice act, has sold his property and is moving to another state.——E. J. Hollingsworth, chiropractor in the same county in which Kovski was located, has likewise disposed of his holdings and moved to a neighboring state; a court action was pending against Hollingsworth, and was soon due to come to trial. The county medical society supported the state's attorney in prosecuting these cases.

Protest Advertising for Physicians.—The Adams County Medical Society, Dec. 14, 1925, passed a resolution protesting against the action of the management of the Western Catholic Union Building of Quincy in sending out literature stating that there is a demand in that city for physicians, and endeavoring to induce physicians to come to Quincy and secure offices in the Western Catholic Union Building. The medical society states that there is an ample number of physicians in Quincy to care for the needs of the people, and that such information is apt to work a hardship on physicians who give up their practice to come to a community that already has a surplus of physicians.

Compulsory Health Education in Normal Schools.—Arrangements have been completed to introduce into the normal schools of Illinois compulsory courses in health education. The plan agreed on by the presidents of the five universities, the state department of health and the state department of registration and education, requires that each student have a certificate of health signed by the family physician, and undergo a physical examination within a year of registration and again within a year of graduation. The courses in health education for two year students will consist of five hours a week in the classroom, supplemented by field work such as sanitary investigations and by work in the gymnasium; four year students will take, in addition, one of a group of elective health subjects. The object is to give the future public school teachers a practical training in hygiene and sanitation that will enable them to teach health in the schools.

Chicago

Society of Medical History.—At a meeting at the City Club, Dec. 18, 1925, Dr. James B. Herrick, president of the Society of Medical History of Chicago, gave an address on "William Heberden"; Dr. Ludvig Hektoen, on "Early Postmortem Examination in America—Health Conditions in Early Norwegian Settlements," and Dr. Morris Fishbein, on "Eclecticism."

Additions to Cook County Hospital.—Work will soon start on additions to Cook County Hospital, which will give that institution a total capacity of about 3,500 beds. The new structures will be, according to the Chicago *Tribune:* 1. An eight-story children's hospital, facing on Wood Street, with a minimum capacity of 480 beds, the wards of which will contain not more than seven beds each, with each bed separated from the next one by a glass partition 7 feet high; each floor will have two solariums and four private rooms. There will be two roof gardens, two operating rooms and an amphitheater for clinics in the basement seating 125. 2. The new men's building, facing Lincoln Street, a seven-story structure with a minimum capacity of 300 beds. 3. The morgue, on Wood Street back of the administration building; it will be three stories high, in Italian renaissance, and have an amphitheater seating 160. The research laboratory and the Institute of Forensic Medicine and Pathology will be in this structure. 4. A new receiving building in the center of the hospital grounds; patients no longer will be received through the main entrance of the hospital, and tunnels from this building will lead to all parts of the hospital. The total cost of these additions will be about two and a half million dollars; they will make Cook County Hospital perhaps the largest and most complete in the world.

INDIANA

Personal.—The new city board of health of Marion appointed Dr. Frank A. Priest to be city health officer to succeed Dr. Victor V. Cameron.——Dr. Walter C. McFadden has been appointed secretary of the board of health of Shelbyville.——Drs. Garrette Van Sweringen, Daniel R. Benninghoff, Jr., and Raymond J. Berghoff have been appointed members of the board of health of Fort Wayne, effective under the new administration, take office January 4.

Society News.—Drs. Bransford Lewis, St. Louis, and Frank C. Mann, Rochester, Minn., recently addressed the Munsey Academy of Medicine on "The Succession Method of the Removal of Stones from the Kidney Pelvis" and the "Experimental Study of the Reduced Liver Function," respectively.——Dr. August O. Truelove, Fort Wayne, addressed the Adams County Medical Society, recently, at Decatur on "Roentgen-Ray Therapy."——Dr. Fred M. Douglass, Toledo, Ohio, addressed the fortieth special annual meeting of the St. Joseph County Medical Society, South Bend, recently, on "Some Phases of Gall Bladder Disease," and Dr. Joseph Brennemann, Chicago, on "The Diagnosis of Abdominal Conditions in Children."——Dr. Edgar C. Denny, Milton, addressed the Shelby County Medical Society recently on "The Good of Medical Organization," and Dr. Samuel E. Earp, Indianapolis, on "The Uses of the Common Drugs."

KENTUCKY

Personal.—Dr. Hiram S. Eggers, for five years medical inspector in Louisville, tendered his resignation, Nov. 30, 1925.——Drs. Walter F. McCrocklin, Louisville, and Vernon Robins have been reappointed as assistant city health officer and bacteriologist, respectively.——Dr. Frederick D. Cartwright has been elected city health officer of Bowling Green, to succeed Dr. Morton M. Moss.

A Million for the University of Louisville.—At the recent election in Louisville, the citizens voted about six to one to authorize the issue of $1,000,000 in bonds for the University of Louisville, and $5,000,000 for the public schools of that city. The university is a part of the municipal educational system; the bond issue will be used to erect the first of a group of buildings on the new campus, and to pay off a debt incurred when the campus was purchased. The school of medicine will remain close to the Municipal Hospital and will not be moved to the new campus. There are now forty freshmen in the premedical combination course in the College of Arts and Science; last fall, 225 applications for admission to the freshmen class of the medical school were received. The enrolment is limited to about seventy-five.

LOUISIANA

Bootleg Physicians to Be Expelled.—The Rapides Parish Medical Society voted, Nov. 25, 1925, to make a part of its constitution and by-laws a resolution to the effect that any member found guilty of prescribing any form of opium illegally, or of selling, trading or giving away his national prohibition prescription book to any druggist or individual, shall be expelled from the society. The resolution also disapproved of writing prescriptions for liquor for any purpose except medical in the treatment or cure of disease.

State Board Meeting.—The Louisiana State Board of Health, at a special meeting, Dec. 14, 1925, adopted the standard milk ordinance of the U. S. Public Health Service, and approved a set of regulations which the board will insist all municipalities conform to, unless they establish more stringent regulations. At this meeting Dr. John G. Martin submitted a report for November for Lake Charles, showing that twenty-one dairies were producing milk with bacterial count ranging from 1,000 to 31,000 per cubic centimeter; the highest bacterial count of the Grade B dairies was 83,000. The state board at this meeting authorized the purchase of a motor truck and equipment to carry exhibits to rural communities away from the railroads.

MARYLAND

Gifts to Frederick Hospital.—Gifts totaling $150,000 have been made by three citizens of Frederick to provide additions to the city hospital. A wing for negro patients has been provided by Mr. and Mrs. Joseph D. Baker, and a wing for general extension of the hospital facilities by Mr. Charles M. Shank.

Superintendent Appointed.—The board of managers of the state tuberculosis sanatorium has ratified the appointment of Dr. John A. Smith as superintendent of the Mount Wilson branch of the institution, which will open early this year. Dr. Smith has been assistant physician at the tuberculosis sanatorium at Sabillasville under Dr. Victor F. Cullen. The new branch at Mount Wilson for the present will be equipped to care for only women's and children's ambulatory cases. The rates for treatment in the branches of the state tuberculosis sanatorium have been increased from $3.50 a week for ward patients and $7 for private rooms to $5 and $10, respectively. A number of beds will be maintained free as heretofore.

Personal.—Dr. Francis Carter Wood, director, Institute of Cancer Research, Columbia University, gave a public lecture on "The Necessity of Education in the Control of Cancer" at the School of Hygiene and Public Health, Johns Hopkins University, Dec. 7, 1925.——Dr. Virgil H. Danforth, Kempton, W. Va., has been appointed assistant physician at the Springfield State Hospital, Sykesville.——Dr. William Siegal has resigned as superintendent of the negro branch of the Maryland Tuberculosis Sanatorium at Henryton to accept a position elsewhere, and Dr. John E. O'Neill, Baltimore, has been appointed as his successor. Dr. O'Neill served fourteen years as head of the municipal tuberculosis dispensaries and two years at the Henryton Hospital.——Dr. Frederick W. Sears of the New York State Department of Health gave one of the De Lamar lectures at the School of Hygiene and Public Health, Johns Hopkins University, Dec. 21, 1925, on "Some Problems in Rural Hygiene."——Dr. William H. Welch has been appointed a member of a special board of trustees for a fund which the National Academy of Sciences is endeavoring to raise for research in pure science: it is hoped that an annual income of at least $2,000,000 may be raised to establish national research fellowships and in other ways cooperate with institutions throughout the country.——Dr. William W. Ford, professor of bacteriology, Johns Hopkins School of Hygiene and Public Health, has been appointed to prepare the official report to the state department of health of the life of Raymond C. Salter, D.Sc., chief, bureau of bacteriology, who died recently.

MASSACHUSETTS

Dr. Nobel Sentenced Again.—Dr. Lemuel F. Nobel, Boston, was recently sentenced to serve two years in the house of correction on a charge of larceny, it is reported. Dr. Nobel is said to have served eighteen months in the house of correction a few years ago, following a raid on a sanatorium with which he was connected for the treatment of drug addicts.

Complimentary Dinner to Dr. Green.—About 250 pupils and former house officers of Dr. Charles M. Green, professor emeritus of obstetrics and gynecology at Harvard University Medical School, gave a complimentary dinner in his honor at the Harvard Club, Dec. 18, 1925, on the occasion of Dr. Green's seventy-fifth birthday. Dr. Frederick C. Shattuck, the toastmaster, presented Dr. Green with a book containing his writings, autographed by those present, and also a silver bowl. Among the speakers were Drs. Joseph B. De Lee and Emilius C. Dudley, Chicago; Dr. Barton C. Hirst, Philadelphia, and Dr. John O. Polak, New York.

MICHIGAN

Chiropractor Sentenced.—J. E. Fitzgerald, Sturgis, chiropractor, was found guilty in circuit court in Centerville, Nov. 30, 1925, of practicing medicine without a license, it is reported, and was sentenced to ten days in jail and to pay a fine of $100.

Thirty-Three Typhoid Cases Traced to Carrier.—The Michigan State Health Department announced, Dec. 25, 1925, that the thirty-three cases of typhoid fever which followed a church dinner at Eaton Rapids, Nov. 18, 1925, had been traced to an 80 year old woman, who had contributed squash, which she worked through a colander with her hands. The aged woman had typhoid many years ago; laboratory tests showed that she is a carrier. Among those afflicted are former Lieut.-Gov. Luren Dickinson and Dr. Manes B. Bradley, former state auditor general. To date three of the cases have proved fatal.

MINNESOTA

Diphtheria Immunization in St. Paul.—There have been 8,559 school children immunized against diphtheria with toxin-antitoxin in St. Paul this school year, and there is a much better spirit of cooperation among parents than last year. According to the health officer, Dr. Benjamin F. Simon, no child is immunized without a written consent of the parents. Most of this work is being done by the school physicians and nurses free of charge.

MISSOURI

Hospital News.—An ordinance has been introduced in St. Louis to condemn two square blocks of ground, adjacent to the City Hospital, to provide room for extension. —— St. Mary's Infirmary, St. Louis, is completing plans to erect a new clinic building and a new hospital to be devoted entirely to charity.

Court Sustains State Board in Briggs Case.—The circuit court at St. Louis has sustained the state board of health in revoking the license of Dr. Waldo Briggs, St. Louis, under a charge of "bad moral character." Briggs had appealed to the court on a writ of certiorari. Judge Miller made a decision sustaining the board without commenting on the argument of Briggs' attorney.——The finding of the state board was reversed in the cases of Drs. Archibald M. Ecklund and Spurgeon H. Barnett, St. Louis, and their licenses were ordered restored. The board found these two men guilty of making false statements concerning their education; their attorneys argued that the board had no authority to try them on that question as the law merely required applicants to show evidence of having a diploma from a medical school giving a four year course, whether or not the applicants had attended the full course.

Adcox Freed of Charges.—Dr. Robert Adcox, St. Louis, who had been indicted in connection with the medical diploma mills in Missouri, has been freed of all of those charges. Assistant Circuit Attorney Stack, says the St. Louis *Star*, confessed an error for the state in the bribery case in which Adcox was convicted and his punishment fixed at two years' imprisonment. A second bribery charge pending in the circuit court was nol prossed, Nov. 9, 1925, by the state. Attorney Stack pointed out that Adcox was now aiding the state in its suit to revoke the charter of the St. Louis College of Physicians and Surgeons and that the attorney general's office had stated in the Supreme Court that Adcox had been illegally convicted. It appears that at the time of Adcox' alleged bribery, the law did not permit country school superintendents to issue preliminary education certificates and, therefore, a superintendent could not be bribed to do that which he had no legal right to do.

The Adcox Confession (concluded).—It did not occur to Adcox that "Harry Thompson" was other than a salesman which his card indicated. He had heard Thompson inquire where he could find a physician and had seen the mail man direct him to his home. As usual, however, he investigated Thompson, and then turned him over to Ralph A. Voigt. Voigt not only looked up Thompson's references but employed a detective, and he reported that "Harry Thompson" had been the prospect's name at least for a long time. In October, 1923, Voigt wired Adcox that he was coming to see him; he was excited as some one had said that "Thompson" was an assumed name. Voigt insisted on finding Thompson, ostensibly to tell him he had arranged for him to get an Indiana license but really to get back the high school certificate, medical diploma and chiropractic diploma which Thompson had bought. The St. Louis *Star* had secretly photographed Voigt and Adcox with Thompson, and Thompson had introduced some "friends" who wanted medical "degrees." Having clinched its case, The *Star* published an extra, Oct. 15, 1923, with a facsimile of the diploma which Voigt sold to Thompson, who, it was then disclosed, was Harry Thompson Brundidge, a member of the staff of the *Star*, who had been assigned to this case. Adcox called up his home and learned that the circuit attorney was waiting to arrest him. He was taken to the police station, bond was arranged, and he learned that Voigt and others had been arrested in Kansas City. Adcox was sought by many persons. An attorney told him that, unless he arranged bond for one of his "associates," he would turn state's evidence; doctors (factory made) called to urge him to flee and to ask whether he intended to expose them; some offered money for his defense; others threatened, and Voigt demanded to know why he turned Thompson over to him. Adcox was eventually tried, convicted and sentenced to serve two years in prison.

NEW JERSEY

School Board Adopts Schick Test.—At a meeting of the board of education of Highland Park, Nov. 10, 1925, it was decided to adopt the Schick test and the use of toxin-antitoxin to immunize school children against diphtheria; the work will be purely elective with the parents.

Another Million for Science.—President Hibben announced, Dec. 20, 1925, that the General Education Board had given to Princeton University $1,000,000, to increase the equipment and facilities for research and advanced teaching in the biologic and physical sciences. The gift is conditional on Princeton's providing an additional $2,000,000 for the same purpose.

NEW YORK

Milbank Memorial Fund.—The second annual report of the health demonstrations conducted by the Milbank Memorial Fund in the city of Syracuse, rural Cattaraugus County, and in a congested district in New York, has been issued. These demonstrations were inaugurated to enable communities to use medical science in their daily routine, and to assist in applying this knowledge to the prolongation of life. The demonstrations have not been in operation long enough to trace the improvements noted entirely to them, but coincidently there has been a reduction in infant mortality in Cattaraugus County from 93 per thousand living births in 1923 to 65 in 1924; improvement is also indicated in the health of Syracuse; the demonstration in the Bellevue-Yorkville district, New York, is still in the inital stage. The board of supervisors of Cattaraugus County have voted to increase the public health budget from $16,000 in 1925 to $56,000 in 1926. The Milbank Memorial Fund is setting aside $325,000 annually for this and similar projects. During 1924 the fund's pledges for health and educational work were $809,750. Elizabeth Milbank Anderson established and endowed the Milbank Memorial Fund to "improve the physical, mental and moral condition of humanity, and generally to advance charitable and benevolent objects." The grants for philanthropic purposes now total $3,428,675.

New York City

Fourth Harvey Lecture.—James B. Collip, D.Sc., professor of biochemistry, University of Alberta Faculty of Medicine, Canada, will deliver the Fourth Harvey Society lecture at the New York Academy of Medicine, January 2, on "The Internal Secretion of the Parathyroid Glands."

Religion as Related to Health.—A group of clergymen affiliated with the Federal Council of Churches in America have offered their assistance to the New York Academy of Medicine in its investigation of religion as related to health. The investigation has just started, and will cover several months; as yet, it has not progressed sufficiently to warrant accepting the offer.

Medico-Legal Society.—At the annual meeting of the Society of Medical Jurisprudence at the New York Academy of Medicine, Dec. 14, 1925, Walter J. Carlin was elected president; Dr. L. Howard Moss, vice president; Dr. John E. Welch, treasurer, and Dr. Edward E. Hicks, recording secretary. This society was incorporated in 1885; it is composed of lawyers, physicians and chemists, and meetings are held once a month.

Statue of Balto Unveiled.—A bronze statue of Balto, leader of Gunner Kassan's team in the relief of Nome, Alaska, about a year ago, was unveiled in Central Park, Dec. 15, 1925, near Sixty-Seventh Street and the East Drive. It is one and a third times the size of Balto, and on a plate are these words, among others: "Dedicated to the indomitable spirit of the sled dogs that relayed antitoxin 600 miles over rough ice, through arctic blizzards, and across treacherous waters from Nenana to the relief of stricken Nome in the winter of 1925." The statue is the work of Frederick G. Roth. Balto was present at the ceremonies.

Hospital News.—The campaign to raise $1,000,000 for St Vincent's Hospital opened with a dinner at the Waldorf-Astoria, Dec. 2, 1925.——Friends of Mrs. George Emerson Brewer have donated in her memory a solarium to the new Presbyterian Hospital, which will be adjacent to the twelve bed ward to be dedicated in memory of the service in France of Base Hospital No. 2, which was commanded by Colonel Brewer. An endowment fund has been provided for the upkeep of the solarium and ward, although three of the twelve beds have not yet been endowed.——The Borough Park Maternity Hospital, Brooklyn, has opened its new three story, fireproof addition, and has reconstructed a large dwelling across the street from its main building to accommodate forty nurses.

State Asylum to be Skyscraper.—The New York State Psychiatric Institute and Hospital, to be erected at the Columbia-Presbyterian Medical Center, One Hundred and Sixty-Eighth Street and Broadway, will be a twenty story structure, costing $1,600,000 and construction work will start in February. The first ten floors will be devoted to hospital wards and rooms; the other ten floors to laboratories, museum, library, classrooms and other facilities for research; one

entire floor will be set aside for mentally ill children. There will be a large outpatient department. The new building will accommodate 200 patients. Patients of special interest in connection with research in mental disease will be admitted in the new building, the others being sent to the regular psychopathic hospitals.

Tuberculosis and Health Association.—Twenty years ago the New York Tuberculosis and Health Association had a budget of $4,600, and for the current year it is $215,000, contributed by 90,000 persons through the purchase of Christmas seals. The children's service of the association during the last summer arranged to send 1,507 children to camps and fresh air homes, and provided dental treatment and instruction to nearly 7,000 children. The dispensary service comprises thirty-one tuberculosis clinics; the hospital service, among other things, provided 1,503 artists to give concerts in the tuberculosis hospitals to more than 10,000 patients; more than 700 eligible for work have been referred to the vocational service, and the health speaker service provided health lectures attended by 500,000 people.

OHIO

Emeritus Professors Appointed.—Dr. William H. Humiston, clinical professor of gynecology, and Dr. John M. Ingersoll, associate professor of otolaryngology, after many years of active teaching in Western Reserve University School of Medicine, Cleveland, were appointed emeritus professors, Dec. 15, 1925. The resignations of Dr. Emile Holman and Dr. W. J. Merle Scott were accepted by the board of trustees to permit them to accept positions at Leland Stanford University and Rochester University, respectively; appointments confirmed by the board of trustees included Dr. Frank S. Gibson, instructor in surgery; Dr. Raymond C. McKay, instructor in medicine; Dr. Clarence H. Heyman, associate visiting orthopedist to the Rainbow Hospital for Crippled Children, and Dr. Clyde L. Cummer, visiting dermatologist at Charity Hospital.

Society News.—Dr. Leora G. Bowers, Dayton, president-elect, Ohio State Medical Association, addressed the Eighth Councilor District at Lancaster recently on "Education for the Physician of the District." Dr. Bowers also recently addressed the Ninth District Medical Society at Gallipolis at the annual meeting.——Dr. R. Foster Kennedy, professor of clinical psychiatry, Cornell University College of Medicine, New York, addressed the Columbus Academy of Medicine recently on "Symptomatology and Diagnosis of Extending Lesions of the Brain."——Dr. Howard A. McKnight, Springfield, recently addressed the Clark County Medical Society on "Tuberculous Peritonitis."——Dr. George E. de Schweinitz, Philadelphia, formerly President of the American Medical Association, addressed the annual meeting of the Academy of Medicine of Cleveland, Dec. 18, 1925. ——Dr. Roy W. Scott addressed the Trumbull County Medical Society, Nov. 19, 1925, on "Coronary Disease and Angina Pectoris."——Dr. Oliver P. Kimball, Dayton, addressed the Butler County Medical Society at Miami University, Oxford, Nov. 25, 1925, on "Goiter Prevention."——Drs. Albert H. Freiberg and Russell P. Schwartz, Cincinnati, addressed the Academy of Medicine of Toledo and Lucas County, Dec 4, 1925, on "The Light Treatment of Surgical Tuberculosis in Low Altitudes: Its Significance and Technic."

OKLAHOMA

Society News.—Dr. Arthur S. Risser, Blackwell, president-elect of the state medical association, addressed the Woods County Medical Society, Nov. 24, 1925, on "Scientific Doctors."

Personal.—Dr. Dalton Bennett, Texanna, has been appointed county health officer of McIntosh County, to succeed Dr. McCullough of Checotah, resigned.——Dr. Raymond H. Fox, Altus, has been appointed physician for the Frisco Railroad to succeed the late Dr. William E. Sanderson, who has held the position for ten years.

PENNSYLVANIA

Dr. Keene Appointed Professor.—Dr. Charles H. Keene has resigned as director of health education in the Pennsylvania Department of Public Instruction, to accept appointment as professor of hygiene and director of physical education in the University of Buffalo.

Dr. Ostheimer Resigns.—Dr. Maurice Ostheimer, assistant professor of diseases of children, University of Pennsylvania School of Medicine, has resigned and also retired from the practice of Medicine and moved from Philadelphia to his country home at Whitford. Dr. Ostheimer was a teacher of pediatrics at the University of Pennsylvania for twenty-five years.

Philadelphia

Hospital News.—The Northern Liberties Hospital, Seventh and Brown streets, is conducting a campaign for $50,000. More than 20,000 persons, it is reported, received treatment at the dispensary of this hospital during the first year of its existence.

Society News.—Dr. Kirksey L. Curd addressed the Philadelphia Academy of Medicine and Allied Sciences, Dec. 21, 1925, on "Puerperal Sepsis."——The Northern Medical Association of Philadelphia held a symposium, Dec. 21, 1925, on gastric conditions, in which the speakers were Dr. John B. Deaver, Dr. Martin E. Rehfuss and Dr. Simon Wendkos.

SOUTH CAROLINA

Physician Sentenced.—Dr. James D. Moorehead, Columbia, was sentenced, Nov. 9, 1925, it is reported, to one year and a day in the federal penitentiary at Atlanta for violation of the Harrison Narcotic Law.

Personal.—Dr. Pauline E. Dinkins has been appointed medical director of the Brewer Hospital, Greenwood, which serves the colored population of four counties, and which was established by the American Missionary Association of New York.—— Dr. James M. Beeler, Columbia, has been elected superintendent of the Spartanburg General Hospital.

TENNESSEE

University News.—The board of trustees of the University of Tennessee ratified, Dec. 14, 1925, the expenditure of $780,000 for the construction of the first unit in the $1,000,000 program of expansion of the medical department of the university at Memphis.

TEXAS

Chiropractor Fails to Obtain Injunction.—The suit to restrain Attorney-General Moody from bringing action against chiropractor H. C. Allison, Fort Worth, on charges of violating the state medical practice act was dismissed, Dec. 4, 1925, it is reported, by federal judge Wilson, who set forth in a lengthy opinion that in consequence of decision handed down by the United States Supreme Court he could not grant the petition for a temporary injunction.

Pledge of Support.—At the annual banquet of physicians of southeast Texas, Beaumont, Dec. 18, 1925, Dr. Charles M. Rosser, Dallas, president of the Texas State Medical Association, spoke on "Enforcement of the Medical Practice Act"; at the close of this address the assembly of 400 unanimously pledged support in the campaign in progress in Texas. Dr. D. Stuart Wier, Beaumont, was toastmaster; among the speakers were former Lieutenant Governor Davidson and Dr. Marvin L. Graves of Houston.

WASHINGTON

Hospital News.—The contract has been closed for the first unit of a new county hospital for Pierce County, which will cost $100,000.

Personal.—Dr. Percy P. Cooley, Monroe, has been appointed county physician of Snohomish County.—— Dr. Charles F. Eikenbary, Spokane, has been elected a member of the school board.

"Major de Cercy"—Microscopes Renovated.—"Major Raymond de Cercy, French war hero, A.M.P.P.E.C.," seems to be renovating microscopes now in the vicinity of Tacoma (THE JOURNAL, Dec. 5, 1925, p. 1821). A physician writes that de Cercy, claiming to be a highly qualified technician, has taken hundreds of dollars by means of his fake service to physicians, clinics and laboratories in Tacoma alone. Our correspondent had a "sad personal experience" and has no recourse, as de Cercy has no permanent address.

CANADA

Society News.—Dr. Frederick W. Marlow, Toronto, recently addressed the Victoria County Medical Society at Lindsay on "Symptomatology of Pelvic Diseases."——Dr. Norman B. Gwyn addressed the Hastings County Medical Society recently at Trenton on "Early Diagnosis and Treatment of Pneumonia and Empyema."

Health Commission Curtails Activities.—The Massachusetts-Halifax Health Commission has closed the health center at Admiralty House, Halifax, and also at the Dartmouth center;

a few clinics are being continued in the north end of Halifax as well as those at the Dalhousie Health Center. The laboratory work has been discontinued and the number of public health nurses reduced. The *Journal of the Canadian Medical Association* says that with these restrictions the commission will be able to continue its work for at least two years more.

Association Discontinues Press Articles.—The Canadian Medical Association has decided to discontinue for the present the syndicated weekly health articles to some twenty newspapers which it served in this manner during the last year. The reason is that this department would cost for the next year $2,000, and there are many other agencies prepared to supply health articles gratuitously. The executive committee feels that the service has already accomplished what it set out to do; that is, it established sympathetic relations between the Canadian Medical Association and many other organizations.

Personal.—Dr. John A. MacDonald, St. Peters, Nova Scotia, was elected to the Parliament at Ottawa at the recent federal election.——Drs. Lorne J. Violette, Benjamin H. Dougan and Henry I. Taylor, all of the province of New Brunswick, were recently elected to the legislature.——Dr. William F. Roberts, who for eight years has been minister of health, will retire from public life as a result of the defeat of the New Brunswick government in the recent provincial elections.——Dr. Joseph K. Breitenbecher, former professor of zoology at the University of Oklahoma, is now on the teaching staff of that department at McGill University, and will also do research work.——Dr. Donald C. Smelzer, formerly associate superintendent, Montreal General Hospital, has been appointed superintendent of the Charles T. Miller Memorial Hospital and the Amherst Wilder Dispensary, St. Paul. Dr. Smelzer, for the last two years, has been with the Buffalo General Hospital.——Dr. Thomas Digby Wheeler recently won the Frosst trophy among medical golfers of Winnipeg.——Dr. James A. Gorrell, Manitoba, has resigned from the surgical staff of the Children's Hospital on account of ill health.——Dr. William Egbert of Calgary, Alberta, has been appointed lieutenant governor of the province. The Calgary Medical Society recently presented Dr. Egbert with a traveling bag on the occasion of a special meeting in his honor.

GENERAL

Abstracts in Spanish.—*Southwestern Medicine* began with its December issue to include abstracts in Spanish of the principal items in that journal, and will invite physicians in northern Mexico to become affiliated with the Medical and Surgical Association of the Southwest.

Principal Causes of Death in 1924.—The Department of Commerce announces that in the death registration area of the United States in 1924, there were 1,173,990 deaths, representing a death rate of 11.9 per thousand of population, as compared with with 12.3 in 1923, 11.8 in 1922 and 11.6 in 1921. There was a decrease in the death rate from influenza from 44.7 per thousand of population in 1923 to 19.6 in 1924, and from pneumonia from 109 to 98.4. There were slight increases in the death rate from heart disease, cancer and automobile accidents.

Gifts to Community Trusts.—Senator James Couzens is reported as having administered through the Detroit Community Trust an initial fund of $100,000 for physically handicapped persons.——The Harris Trust and Savings Bank of Chicago has received as trustee, according to *Community Trust Story*, $1,500,000 for the Chicago Community Trust from Mr. James A. Patton, largely for educational purposes.——Wills recently probated in Cleveland brought an addition of $300,000 to funds held for the Cleveland Foundation.——The citizens of Winston-Salem, N. C., have raised a fund as a memorial to a boy of that city who recently met his death in an athletic contest. The fund will be administered for the Winston-Salem Foundation by the Wachovia Bank and Trust Company.

Society News.—At a meeting of the Western Surgical Association, Wichita, Kan., Dec. 18-19, 1925, Dr. Robert C. Coffey, Portland, Ore., was elected president; Drs. Neil J. McLean, Winnipeg, Canada, and Vilray P. Blair, St. Louis, vice presidents; Dr. Harry P. Ritchie, St. Paul, secretary, and Dr. Frank R. Teachner, Kansas City, Mo., treasurer. The next meeting will be in Duluth, Minn., probably late in September. Twelve new members were elected at this meeting.——Dr. Hubert A. Royster, Raleigh, N. C., was elected president of the Southern Surgical Association at the meeting in Louisville, Ky., Dec. 17, 1925; Drs. Louis Frank, Louisville, and Frank K. Boland, Atlanta, Ga., vice presidents, and Dr. Robert L. Payne, Norfolk, Va., secretary. Dr. Royster has been secretary of the association for nine years. The next meeting of the association will be in Biloxi, Miss.

Travel Study Club.—Plans have been completed for a tour of European centers by the Travel Study Club of American Physicians. The party will sail, June 12, from New York and visit medical centers in Stockholm, Oslo, Copenhagen, Hamburg, Cologne, Wiesbaden, Heidelberg, Strasbourg, Berne, Zurich, Leysin, Geneva, Paris and London, returning to New York, August 8. Membership is open to physicians of good standing, but the party is limited to not more than fifty physicians and not more than twenty-five nonmedical persons (families and friends), thus limiting the party to seventy-five. Applications for membership and further information should be addressed to Dr. Richard Kovacs, secretary-treasurer, 223 East Sixty-Eighth Street, New York, or to Raymond and Whitcomb, 225 Fifth Avenue, New York, who are the business managers of the tour. The tenth annual reunion of the Travel Study Club will be during the meeting of the American Medical Association, Dallas, Texas, April 19-23.

New County Society Presidents.—The following physicians have recently been elected president of the county medical society indicated:

Dr. Mott H. Arnold, San Diego, Calif., San Diego County Medical Society.
Dr. Samuel J. Bradfield, Bartlesville, Okla., Washington County Medical Society.
Dr. James E. Crawford, Tulia, Texas, Hale-Floyd-Swisher-Briscoe County Medical Society.
Dr. Charles D. Cupp, Breckenridge, Texas, Stephens County Medical Society.
Dr. John Wilson David, Corsicana, Texas, Navarro County Medical Society.
Dr. Stephen A. Edwards, Van Wert, Ohio, Van Wert County Medical Society.
Dr. John C. Erwin, Jr., McKinney, Texas, Collin County Medical Society.
Dr. Joseph K. B. Evans, McGuffey, Ohio, Hardin County Medical Society.
Dr. Irl E. Hempstid, Hutchinson, Kan., Reno County Medical Society.
Dr. Abby M. Henderson, Niles, Mich., Berrien County Medical Society.
Dr. Henry C. Heuck, Sigel, Ill., Effingham County Medical Society.
Dr. Arthur W. Irwin, Oswego, N. Y., Oswego County Medical Society.
Dr. Harry C. Johnson, Antlers, Okla., Pushmataha County Medical Society.
Dr. Chester E. Joss, Topeka, Kan., Shawnee County Medical Society.
Dr. Howard M. Leinbach, Reading, Pa., Berks County Medical Society.
Dr. William P. McKee, Eustis, Fla., Lake County Medical Society.
Dr. Robert P. Nall, Armorel, Ark., Mississippi County Medical Society.
Dr. Peter Noe, Willsboro, N. Y., Essex County Medical Society.
Dr. John P. Stewart, Frankfort, Ky., Franklin County Medical Society.
Dr. Albert E. Stickley, Coopersville, Mich., Ottawa County Medical Society.
Dr. Samuel L. Stringfield, Waynesville, N. C., Haywood County Medical Society.
Dr. Andrew Struble, Ghsco, Kan., Cloud County Medical Society.
Dr. George T. Tyler, Greenville, S. C., Greenville County Medical Society.
Dr. John O. Weaver, Shenandoah, Iowa, Page County Medical Society.

News of Epidemics.—Eight girl students of the Michigan State College developed typhoid fever following a church dinner at Eaton Rapids, Nov. 18, 1925, the state health officer recently reported; also several residents of that city and two residents of Lansing; there were seventy students in the party, and all were examined for typhoid before being permitted to go home for the holidays.——The outbreak of smallpox at Wapato, Wash., totaled twenty-three cases, Dec. 13, 1925.——The scarlet fever epidemic in Spokane, Wash., was still spreading, Dec. 13, 1925, when there were 101 cases under treatment in the city, forty-five new cases having been reported thus far that month. There had been no deaths in the outbreak since October.——The measles epidemic in Yonkers, which started about October, had caused sixteen deaths and 1,400 cases up to Dec. 14, 1925.——There was an outbreak of fourteen cases of smallpox in Gibson County, Tenn., and another of twenty-five cases of measles in the Franklin School of Lebanon, Pa., reported, Dec. 15, 1925.——There were eleven cases of scarlet fever under quarantine in Breensburg, Pa., Dec. 4, 1925.——An outbreak of fifty cases of whooping cough in the public schools of North Attleboro was reported as of Dec. 4, 1925.——There were three cases of smallpox at Carrollton in one family reported, Dec. 3, 1925.——More than 100 cases of measles were reported in Ypsilanti, Mich., Dec. 10, 1925.——No. 2 school in Jacobs Chapel community, northeast of New Albany, Ind., was closed by the county health commissioner, Dec. 4, 1925, on account of an outbreak of scarlet fever.——There was an outbreak of several cases of smallpox on the outskirts of Danville, Va., reported, Dec. 8, 1925.——Orders were issued, Dec. 7, 1925, excluding all unvaccinated students from the Ohio State University and the Indianola School, Columbus, Ohio, following the discovery of a case of smallpox in the university.

——An epidemic of about fifty cases of smallpox was reported in Maury County, Tenn., Dec. 8, 1925; health officials had appealed to the state department for assistance.

FOREIGN

Prize for Work on Tuberculosis.—The *Gazzetta degli ospedali* states that the Forlanini endowment offers a prize of 10,000 liras for the best work offered in competition on the pathologic anatomy, pathogenesis or treatment of pulmonary tuberculosis. The work must be received (eight copies) by the Ospedale Maggiore at Milan, Italy, before Dec. 31, 1926.

National Medical Congress in Japan.—The seventh session of the National Medical Congress will be in Tokyo, March 31-April 6, 1926, under the presidency of Dr. Sankichi Sato. There are now twenty-three sections, new sections having been added since the sixth session in physiology, biochemistry, pharmacology, roentgenology, tuberculosis and medical instruments. Among others, Profs. G. Kato, I. Matsuo and Y. Asahina will give special lectures.

Society News.—The officers of the American Medical Association of Vienna, which is organized for the systematic promotion of international postgraduate study and whose address is Alserstrasse 9, Vienna, VIII, are, president, J. S. Budyk, Montreal; vice president, Edward D. Allen, Chicago; secretary, Edward A. Pinkus, Brooklyn, and treasurer, Jabez A. Mahan, Ellensburg, Wash.——The ninety-fourth annual meeting of the British Medical Association will be held at Nottingham under the presidency of Mr. R. G. Hogarth, who will deliver his address to the association, July 20. The association last met in Nottingham in 1892.

John Irvine Hunter Memorial Fund.—The committee of the John Irvine Hunter Memorial Fund announces in the *Medical Journal of Australia* that contributions, Oct. 31, 1925, totaled more than £1,309. The fund hopes eventually (1) to provide a portrait of Dr. Hunter for display in the great hall of the University of Sydney; (2) to provide a bust of Dr. Hunter for the Medical School at the University of Sydney; (3) to establish an annual oration on some subject of original research, and a medal; (4) to institute a library to contain all current, scientific and medical literature and works of reference in each branch of medicine; (5) to establish a laboratory for clinical research work for which the New South Wales government will be requested to provide the building, and (6) to offer annual scholarships in the laboratory to research workers.

Personal.—Dr. James G. Sleeman, Adelaide, Australia, has been appointed superintendent of the Adelaide Hospital.—— A Swiss exchange mentions that Dr. Edwin Bramwell, Edinburgh, is to deliver a course of lectures on multiple sclerosis and brain tumor at Basel as interchange professor.——Dr. Z. Glorieux, inspector general of the institutions for the insane and feebleminded in Belgium, has reached the retiring age; his portrait was unveiled at the Collège des médecins at Brussels, the tribute terminating with a banquet.——Honorary degrees have been conferred by the Sorbonne, Paris, on Drs. Pawlow, Leningrad; Noguchi, New York, and Sir Ernest Rutherford, Cambridge.——Nine persons, all physicians but one, formed the board at Paris for the state examination of blind candidates as certified masseurs. Dr. Fabre is the founder and director of the school for training the blind in this work.

Deaths in Other Countries

Sir Charles Brown, consulting medical officer, Preston Royal Infirmary, and former vice president of the section of medicine of the British Medical Association, Nov. 23, 1925, aged 89.——Dr. **Bela Török,** professor of otology, Budapest. ——Dr. **F. Schnopfhagen,** director of the state insane asylum, Niedernhart, Austria.——Dr. **E. de Smet,** emeritus professor, Brussels, aged 83.——The *Gaceta Médica Asturiana* mentions the death of Dr. **Puelles,** Seville, as another victim of the professional use of the roentgen rays.——Dr. **Desnos,** Paris, first president of the International Urologic Society, on a medical mission to French India, died recently at Pondicherry. ——Dr. **G. Piza e Almeida,** São Paulo, formerly minister from Brazil to Germany and to France, graduate of the University of Pennsylvania school of medicine, died in Paris recently, aged 74.——Dr. **G. Puppe,** professor of forensic medicine, Breslau, and writer on medicolegal and social medicine topics, succumbed to embolism of the saphenous vein, aged 58.——Dr. **M. Oberst,** emeritus professor of surgery, Halle, aged 77.——Dr. **M. Kirchner,** Berlin, long at the head of the public health system of Prussia before the war, aged 72.——Dr. **Albert Cauchoix,** Paris, surgeon to the municipal public health service, aged 46.

Government Services

Annual Report of Veterans' Bureau

In the Annual Report of the United States Veterans' Bureau, just issued, Gen. Frank T. Hines, director, recommends the enactment of legislation by Congress to create a medical corps in the bureau similar to that which exists in the army and navy. "One of the first and most necessary steps toward raising the standard of this medical service," says Director Hines, "is to make it sufficiently attractive to secure and retain well trained, conscientious physicians, a large percentage of whom must have special knowledge in the fields of medicine, particularly diseases of the lungs, and neuropsychiatry."

This recommendation of the director has the support of the medical council of the bureau and of the ex-service men's organization. It is believed that President Coolidge approves the plan of creating this medical corps in the bureau, and it is probable that legislation proposed in Congress, on the subject of the United States Veterans' Bureau, will include this provision.

The most important addition to the medical service of the Veterans' Bureau is stated by Director Hines to be the creation of the medical council. The function and purposes of this council are for the elevation of the character of medical service of the bureau. The council consists of physicians, and experts of national prominence, who are specialists in tuberculosis, neuropsychiatry, internal medicine, surgery, hospital administration and medical research. Stated meetings are held quarterly with the medical director and staff for the consideration of the medical problems of the bureau. Members of the medical council visit the hospitals and various offices of the bureau throughout the country for the purpose of improving the service and administration of the medical corps. As a result of the activities of the medical council, a section on medical research was established. The functions of this section are to study available medical data by which the results accomplished by the bureau might be measured, investigation of the character of clinical work, and the promotion and encouragement of research work. The establishment of two diagnostic centers for the study of cases presenting difficulties of diagnosis, or which are the subject of medical controversy, is also the result of the recommendations of the medical council. These diagnostic centers are at the Cincinnati General Hospital and the U. S. Veterans' Hospital No. 32, Washington, D. C.

Gross expenditures at veterans' hospitals during the fiscal year amounted to $28,803,845.19, or $9,750,590.29 more than was expended during the preceding fiscal years. Of this increase, $2,186,442.81 occurred at tuberculosis hospitals, $1,358,808.74 at general hospitals and $3,205,338.74 at neuropsychiatric type hospitals. The net operating expense for hospitalization, which does not include expense for new construction, nonexpendable equipment, or services performed to outpatients, was increased by $4,166,080.26, in comparison with similar expenses for the previous fiscal years.

A study of the deaths in United States Veterans' hospitals indicates that the deaths from tuberculosis, neuropsychiatric and general medical conditions, are in the ratios 66, 13 and 21. This low death ratio of neuropsychiatric patients would suggest that future hospitalization will deal very largely with this type of patient, particularly when this fact is substantiated by the evidence set forth in the total hospital load; that is, that even though the admissions for the year are 19.70 per cent neuropsychiatric, to 28.54 per cent tuberculosis, the comparatively low turnover in neuropsychiatric hospitals results in the current hospital load being in the ratio of 44.55 neuropsychiatric to 35.04 tuberculosis.

Entrance Examination for Public Health Service

Surg. Gen. Hugh S. Cumming announces that there will be an examination for entrance into the regular corps of the Public Health Service, February 8, at Washington, D. C., Chicago, New Orleans and San Francisco. The candidates must be not less than 23 nor more than 32 years of age, must have graduated from some reputable medical college and have had one year of hospital experience, or two years of professional practice. They must pass oral, written and clinical tests and a physical examination. Request for permission to take the examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Dec. 5, 1925.

Treatment of Seamen Suffering from Venereal Disease

An international agreement for the treatment of seamen suffering from venereal disease has been ratified by the British government. The contracting parties undertake that facilities shall be available at each of their chief sea and river ports, for the gratuitous treatment of merchant seamen, without distinction of nationality. Such facilities are to include outpatient treatment, inpatient treatment when the medical officer of the treatment center considers it to be necessary, and sufficient medical supplies to carry out necessary treatment during the voyage to the next port of call. The agreement also requires that each patient shall be supplied with a card for providing a brief record of the diagnosis of his case, the treatment given and the treatment to be followed during the voyage. Apart from the provision of medical supplies during the voyage to the next port, the necessary arrangements are already in force in this country, and the minister of health will be pleased to approve the supply to a seaman patient for his treatment during the voyage to the next port of such drugs, dressings and appliances as the medical officer of the treatment center considers necessary and as, in his opinion, can safely be used by the patient himself.

Evolution and the Book of Genesis

In the first of a series of luncheon hour addresses delivered in a London church, Sir Oliver Lodge said that the first two chapters of Genesis represented two different accounts of the origin of the world and the origin of man. Each account had certain inspirations and certain crudities of its own, but both had appealed to the heart of humanity and represented the most poetic description ever given of the origin of all things. Familiar to everybody, they had sometimes been regarded as scientific statements of facts. But science did not deal with ultimate origins; it took the universe as a going concern and tried to explore it, to see how one thing followed from another, to perceive the links by which they were connected, and to follow it into the future and perhaps trace it back into the past. Time was of the essence of evolution. Time was an element which we could not dispense with, whatever its ultimate meaning might be; it was infinite and we were finite. We could proceed only a little way. Poetry and imagination, however, could assist science. Reason was a great faculty, the importance of which could hardly be overestimated, but it was a mistake to say that it dominated the whole field. As Pascal said, there were two errors, one to ignore reason, and the other to attend to reason only. What inspiration was had not been truly defined, but he believed that inspiration existed. We must regard the first two chapters of Genesis as poetry and dig out their inner meaning by getting below the crust of the superficial and accidental, the mere form or skeleton in which they were framed. Looked at in this way, what was the first chapter? First of all, it was the perception that in the beginning of time—if there was a beginning, and whether there was a beginning or not—there was the brooding of a divine spirit or mind at work planning and executing. Some said that the process of evolution required no mind, no plan. They were going beyond anything they knew. They were not rational. If they said that evolution was the process by which the power worked, they would be right. There was an unfolding, a development. Things did not come into existence all at once. As the tree grew from the seed and the flower from the bud, the process was gradual. Time was involved. How much time was only a question of degree. How did we know that everything was not automatic, haphazard and mechanical? He would not argue against that, for the only philosophers who could think that were the philosophers of Laputa, who sought to make books by throwing together letters at random. It was quite evident that there was nothing random in the universe. An automaton—however automatically it worked—was the creation of mind. The next ingredient in the first chapter was that cosmos sprang from chaos. What were "the heavens and the earth," the universe, as we now called it, composed of? Two units, two minute elements of electricity, positive and negative. These two fundamentals were united by a third, an intangible something, called radiation or ether, and popularly known as light. But for the welding and unifying influence of ether the atoms of matter would be chaos. How they originated, who was to say? Science did not deal with origins. Even poetry had to close its eyes when confronted with ultimate origins. It could only murmur the words, "In the beginning, God."

Another Martyr to the Roentgen Rays

Mr. Reginald G. Blackall, the roentgen-ray pioneer of the London Hospital, has died from the effects of disease due to his occupation. He joined the London Hospital in 1902 and was one of the earliest workers with the roentgen rays, at a time when it was not known how dangerous it was to be exposed to the rays all day long. But even when he did know the danger he stuck to his post, although one of his fellow workers lost both arms and another his life. He himself contracted carcinoma, and both his hands had to be amputated. He retired in 1920. The Carnegie Hero Fund awarded him in December, 1923, its honorary certificate and a grant of $375 a year. The hospital allowed him a pension of $1,425 a year and insured his life for a substantial sum for the benefit of his wife and children.

The Health of Students at "Civic" Universities

Dr. Adami, vice chancellor of Liverpool University, speaking at the annual meeting of the university court, commented on the poor physical state of many of the students at "civic" universities, as compared with those of Oxford and Cambridge. He suggested that compulsory medical and physical examination be instituted and advice given as to the special form of exercise to be taken. An inquiry in the summer term brought to light the fact that only some 300 students, at the most, indulged in sports and games. At Oxford and Cambridge there was a well established tradition that in most of the schools no lectures were given in the afternoon, so that at least an hour, if not the whole afternoon, was spent in the open air, in games and country walks and on the river. To the bulk of the undergraduates coming from public school, open-air exercise became second nature. In Liverpool and other "civic" universities, most of the students came from municipal secondary schools in densely populated districts where opportunity for open-air play was seriously restricted. The students were on an average in a distinctly poorer physical state, and at the university the freedom for exercise was limited to Wednesday and Saturday afternoons.

The Tsetse Fly Problem

The Society for the Preservation of the Fauna of the Empire has issued a pamphlet entitled "The Tsetse Fly Problem and Its Solution." It deals with the theory, which has many supporters in official circles in South Africa, that the destruction of big game and the abolition of game reserves are the simplest and best method of dealing with fly-borne diseases of animals and men. Species of tsetse fly, which belong to the genus *Glossina*, subsist in their adult stage solely on blood and spread nagana among live stock

and trypanosomiasis among human beings. Certain game animals carry the organism of nagana in their blood. The assumption that big game constitutes a sort of reservoir of infection has led to drastic proposals for its extermination in order to break the chain of infection. The pamphlet controverts this view. It points to the large number of species of tsetse fly with divers habits, habitats and victims. Till more is known of their distribution and life history, it is impossible to say whether the suggested measures against game would have the desired effect. The disappearance of the fly from the northern Transvaal has been popularly ascribed to the destruction of game animals. But recent investigation suggests that this belief may be erroneous. In certain areas, disease-bearing tsetse species have survived the destruction of game, while other attempts to kill off game animals have simply driven them and the fly into other areas. In one locality the destruction of game was followed by a violent outbreak of trypanosomiasis which cost several hundred lives. Experts even suggested that the killing of the game may have diverted the fly to man. Big game also reduces the thickets, which harbor the tsetse fly, by eating down the brushwood. The pamphlet suggests that the serious and complex problem presented by the disease-carrying flies can be solved only by a combination of methods which will not necessarily involve the destruction of game reserves, and that before interfering drastically with the balance of nature it would be well to examine the local conditions in every case.

Physician Removed from the Register for Using the Press to Obtain Patients

The general medical council had before it the complaint of the British Medical Association against a physician who sought to promote his practice by publishing in the *Daily Mail* an article entitled "Hay-Fever, New Treatment, Specialist's Report, Patients Cured." The case was peculiar in that his name did not appear in connection with the article, but a number of persons who read it wrote to the *Daily Mail*, which forwarded the letters to the defendant, who then wrote to them inviting appointments. In his defense, he stated that a member of the staff of the *Daily Mail* consulted him as a patient for hay-fever. They discussed the treatment as physician and patient, and it was said that the subject would make an interesting article and that the physician might write one on the treatment. He replied that "he hoped and prayed that his name would not be disclosed, owing to his enormous practice." The next morning an article appeared, but he saw nothing of it until it was published. He had no clue of what use would be made of what he said about the treatment. He had two secretaries who saw to his correspondence. He had no communication with the *Daily Mail* and did not authorize it to give his name and address to readers who wrote to it in consequence of the article. He was asked whether he would pick some cases from those who made inquiries, but he merely said he would see some cases. It was not by his instruction that his secretary sent his professional cards to persons who had been selected from those who made inquiries. He had no desire to seek any professional advantage from the article. He had no need of any advertisement. He was now very sorry he had anything to do with the matter, and as far as he might have offended against professional etiquette, he tendered his apology. He saw the journalist after the article was published and protested. However, in cross examination he admitted that he was not calling the journalist as a witness, and also that he did not write to the *Daily Mail* protesting against the publication. The case was considered proved, and the council ordered his name to be erased from the register. This decision has met with a good deal of criticism from the public and the press, which persist in regarding the council as a medical body actuated by professional prejudices. The fact that it is acting in the interest of the public by protecting it against quackery is not appreciated. Even the *Times* errs. It refers to the British Medical Association (the complainant in this case) as "a doctors' club concerned primarily with the interest of its members." It says that the contention of the association that "the public is ill qualified to judge of the true worth of scientific opinion" is not surprising. It rejoins that "the medical profession itself—as its attitude to Harvey, to Pasteur, to Lister and to a host of lesser discoverers has shown—is sometimes less qualified in this respect even than the public." However, it admits that the general medical council is a statutory body set up by parliament, that is, by the public, to preserve the public interest as opposed to the interest of doctors. But it asks whether it is not in the public interest that "reliable information about new work in the field of medicine should be freely published." In the case of the physician in question, it states that "benefit was conferred on the patient who wrote the article, who not unnaturally sought to bring news of the relief to other sufferers." In consenting to see them, the physician "was acting in good faith and according to the dictates of humanity. Has the council ceased to be able to discriminate between professional and public interests?" This from the *Times*, which is generally well informed in medical matters, is surprising and shows the extent to which sympathy with all kinds of irregular practice prevails in high quarters. Of course, to say that this physician furnished "reliable information" is a gratuitous assumption. As a matter of fact, he declared that, though the result of his conversation with the journalist, the article was erroneous. The *Times* does not appear to realize how easy it is for any one, whether in the profession or outside it, to pretend to a much greater knowledge than he possesses and to inspire faith in the public. But the mark of all such persons, though living in the medical Mecca of London and described in the lay press as "eminent specialists," is that they never contribute anything to medical knowledge, though their claims to skill are unbounded. Populus vult decipi et deceptus est. The charge against this physician of attracting patients by advertisement was clearly proved, and the argument of the *Times* is both unsound and irrelevant to the issue.

PARIS

(From Our Regular Correspondent)

Dec. 7, 1925.

Leprosy in France

M. Jeanselme, in the name of the commission of which he is the spokesman, presented recently to the Academy of Medicine the results of the inquiry into the incidence of leprosy in France. The old centers of infection, known since the Middle Ages, have been very nearly eradicated, but the influx of foreigners from infected countries is constantly increasing. There are at present from 160 to 200 lepers in Paris and a considerable number also in the large maritime ports. A large number of the poorer lepers are vagabonds, who are constantly changing their habitation. The well-to-do patients sojourn at the mineral springs or at other large centers. Both classes constitute a grave danger for their environment. Jeanselme recommended the adoption of: (1) compulsory notification of leprosy; (2) clinical and bacteriologic examination at regular intervals of lepers and of their entourage, and (3) creation of centers for the segregation and treatment of lepers.

Physiologic Researches on the Resorption of Oil Injected Subcutaneously

M. Léon Binet recently presented to the Société médicale des hôpitaux de Paris an outline of researches that he has made on the resorption of oil injected subcutaneously. Injec-

particularly with regard to problems that interest both the clinician and the pathologist; for example, the problems of natural defense, reparatory and restitutional processes, and of the adaptation and compensation of various organs; problems concerning the modes of reaction of the body as a whole, and problems affecting individual variability.

Dr. Liberopulo referred to a patient with pulmonary tuberculosis associated with syphilis, who improved notably as a result of antisyphilitic treatment.

A communication by Professor De Nunno of Naples showed how, by a device of his own invention, he measures the temperature of the air breathed and hence of the lungs, thus securing data that are useful in the diagnosis and prognosis of respiratory and circulatory affections.

Professors D'Amato and Sabatini discussed the pathologic anatomy, pathogenesis and clinical manifestations of cirrhosis of the liver.

On the subject of exophthalmic goiter, the first speaker was Professor Ferrata of Pavia, who dealt with the medical side of the question. He reviewed the various explanations of the origin of the disease, and considered the forms of medical treatment that have been tried, dividing them into hygienodietetic, symptomatic and supposedly pathogenic. Measures that should be undertaken will vary. In the first stages of the disease, medical treatment may prove effective; but surgical intervention, if instituted in season, may still be best relied on to effect a radical cure of exophthalmic goiter. Professor Fiori of Modena presented the surgical aspects of exophthalmic goiter, and advanced the opinion that, while cases of moderate severity remain within the domain of the internist, all others must be given over to the surgeon.

Professor Milani of Rome discussed radium therapy in exophthalmic goiter, which, he said, is little known but concerning which there exist many groundless preconceived opinions. Of 1,080 cases in which radium treatment was given, as reported in the more recent literature, from 38 to 50 per cent of cures were effected in the genuine types; under the influence of radium therapy almost all the symptoms are improved; the struma and the exophthalmos, however, usually prove rebellious.

After discussion of the papers, the assembly adjourned. Padua was chosen as the next place of meeting.

Measures to Combat Noise on City Streets

With reference to excessive noise on city streets, the Ordine dei medici of the province of Rome has approved the following resolution introduced by Professor Zevi:

> The council of the Ordine dei medici of the province of Rome, concerned over the evident damage inflicted on the nervous system of citizens by the noise caused by motor trucks, and still more by the tooting and other shrill noises of passenger automobiles, and, in general, by the various mechanical contrivances which, set in action with the intention of advising passers-by of the danger of a collision, become the indirect cause of injuries, owing to the stunning effect of the noise itself, especially on persons with impaired nervous system, expresses the ardent desire that the national government and the local administrations, taking account of the hygienic and social injury that is being done, shall establish, as soon as possible, technical and administrative regulations such as will remedy the grave state of affairs, which is daily growing worse owing to the increase of traffic.

A Graduate School for Specialists in Clinical Pediatrics

The University of Bologna has established a school for specialists in clinical pediatrics, in which all graduates in medicine and surgery may enroll. The course will extend over two years, at the end of which candidates, on passing an examination and presenting an original thesis, will receive a special diploma, which will have legal recognition. Among others, these topics will be covered: clinical surgical pediatrics, Professor Francioni; clinical surgical pediatrics, Professor Nigrisoli; clinical orthopedics, Professor Putti; general therapy and puericulture, Professors Viola, Novi and Francioni; clinical otorhinolaryngology, Professor Calicetti; odontology, Professor Beretta. The courses begin with the opening of the school year 1925-1926.

The Laboratory School of Medicine in Venice

November 5, the opening address of the new academic year of the Scuola pratica di medicina e chirurgia in the Ospedale Civile at Venice was delivered by Professor Ligorio, director of the hospital. He showed that, during the previous year, 218 lectures had been delivered at the school, which were attended by 2,300 persons. Professor Guicciardi gave his introductory lecture on "Social Obstetrics." He praised his predecessor, Paolo Negri, who left many valuable studies and researches on obstetrics and gynecology. He then reviewed the advances made in these specialties during the last twenty years. He recalled that the mortality from puerperal infection had been reduced to almost zero in centers where medical science and knowledge of hygiene had enlightened the population. The speaker referred to the lamentable fact that criminal abortion was five times more frequent than it was before the war. He regretted that the laws against infanticide were, in general, too lax.

Honor Roll of Students Who Fell in the Great War

The Grande Albo d'Oro, or gold album, containing the names of all the Italian students who fell in the Great War, has been completed. The work was begun and brought to completion through the efforts of *Il Goliardo*, a periodical published in Naples. The list of 10,000 students who belonged to the universities, lycées, technical schools, normal schools and grammar schools was obtained from the schools in response to a circular letter sent out by the minister of public instruction, so that it is believed the honor roll will be accurate.

RIO DE JANEIRO

(From Our Regular Correspondent)

Nov. 15, 1925.

Carbon Tetrachlorid in Hookworm Disease

Dr. H. Maciel, a physician in the Brazilian navy, has just published a report on the treatment of 1,508 cases of hookworm disease with carbon tetrachlorid in the Naval Hospital. This drug has proved to be the most efficient of ancylostomicides now in use, and also the least toxic, when pure. A single dose of 2.5 c.c. has usually been sufficient for the clinical cure of infested adults. There is no danger in repeating the drug at intervals. As an ascaricide, carbon tetrachlorid is valuable, but less efficient than chenopodium oil, its action being slower and one single dose being seldom sufficient for a cure. In cases of mixed worm infection, it is therefore wise to combine both drugs. Against *Trichuris trichiuria*, carbon tetrachlorid has proved almost completely inefficient. One advantage of this drug in hookworm disease is that no laxative is required afterward, except in cases of chronic constipation. In these, it may be better to give magnesium sulphate. Great care must be shown in choosing an absolutely pure product, as other associated substances are extraordinarily poisonous. Gelatin capsules offer a good method of administration, but they must be prepared just before administration, in order to avoid evaporation.

Hematomyelia in Caisson Disease

For the first time in Brazil, a case of caisson disease was reported to the National Academy of Medicine by Dr. Guedes de Mello, who spoke on behalf of Dr. Castello Branco, a physician in the navy. One of the workers in the breakwater at Cobras Island, after working under heavy pressure, 23 meters under the sea, rushed through the decompression process. The result was a hemorrhage in the lower spinal cord and a paralysis of the lower extremities. This paralysis was sudden and at first complete. It showed, however, a tendency to improve after a while, and the patient can now

move about. A condition of persistent paresis still remains. The tendon reflexes, at first exaggerated, are now abolished. Babinski's sign shows attenuation. The lower members contract under plantar stimulation, thus proving the existence of automatism and defense reflexes. All sensations of heat and pain disappeared during the first days of the disease, but this analgesia has now changed into hyperalgesia, although the heat sensation is still defective. The tentative diagnosis was a hemorrhage in the cord. Transitory embolisms usually cause plegic symptoms, as described by Dejerine under the name of spinal intermittent claudication.

New Members of the Academy of Medicine

Drs. J. de Barros Barreto, a sanitarian, David Sanson, an otorhinolaryngologist, and Oswino Penna, a pathologist, have taken possession of the places to which they were appointed in the National Academy of Medicine. Dr. Andrade Reis has been elected a corresponding member from São João d'el Rei, Minas.

New Privatdozents

After the proper competitive tests, Drs. L. Ribeiro Filho and J. de Barros Barreto have been appointed privatdozents of legal medicine and hygiene, respectively, in the Rio Medical School.

BERLIN

(From Our Regular Correspondent)

Nov. 14, 1925.

Extension of the Functions of the Federal Health Service

Heretofore the Reichsgesundheitsamt, or federal health service, has confined its decisions and opinions to cases affecting the reich or federal officials; but it is now permitted to render decisions for a fee, in cases referred by communes or other official bodies, or by private industries or persons. However, at present the Reichsgesundheitsamt has only a limited number of scientifically trained persons among its personnel, and extensive laboratory facilities are lacking. The federal health service must, therefore, reserve the privilege of refusing to render decisions in certain cases. It is prepared to give opinions, render decisions or to make investigations in questions pertaining to bad hygienic conditions of all kinds. It will give advice in problems of industrial hygiene, and opinions with reference to methods of using certain raw materials and the preparation or manufacture of food products. Decisions or expert opinions will not be rendered as to substances and procedures for the preservation of foodstuffs and consumption products, research methods for the recognition of diseases of man and animals, disinfectants, vermin exterminators, prophylactics or medicaments. The federal health service will refuse to render expert opinions in civil and criminal suits pending in the courts, as it is not feasible to send members of the staff to serve as experts in court trials. The fees charged by the federal health service for expert opinions rendered will vary with the nature of the case, and may be determined and agreed on by the parties concerned.

Financial Aid for Berlin Physicians

It has become generally known how great has been the distress among medical men in Germany, during recent years. The medical profession is profoundly grateful to those American physicians who labored to relieve this distress. Professor Einhorn of New York, and Professors Hektoen and Petersen of Chicago, were leaders of the movement to raise funds in the United States. During 1923, which marked the climax of the period of inflated currency, the funds for physicians were supplied almost exclusively through the endeavors of the aforementioned physicians. It thus became possible to supply needy physicians and their dependents with a measure of assistance. The Aushilfsfonds der Notgemeinschaft deutscher Aerzte, which was established by Professor Schwalbe, served as mediator between the American committees and the German aid societies.

The deplorable conditions of recent years have been much improved. With the stabilization of German money the incomes of German physicians have increased, and they are now gradually becoming able to keep above water the heads of their dependent colleagues. The sufferers today consist, for the most part, of physicians who are getting too old to practice. The representative medical societies are supplying a reasonable quantity of food for these elderly physicians. Recently, the *Aerztekammer* (chamber of physicians) of Berlin has been more active in this direction. In Berlin aid is most needed. A few weeks ago, at a meeting of the *Aerztekammer*, the treasurer advocated the creation of an aid fund for elderly physicians and their dependents. He pointed out that, of the 4,000 or more physicians of Greater Berlin, approximately 2,381 have an income not exceeding 3,000 marks ($714). Of these, 312 are more than 65 years old. Thirty-six physicians pay no income tax; the taxable income of twenty-six is under 1,000 marks; of forty-three, under 2,000 marks, and of twenty-five, under 3,000 marks. As it may be assumed that an income of less than 3,000 marks is not sufficient to supply ordinary needs, more than one third of Berlin physicians over 65 years of age are in want. Among this number are men who, before the war, could be counted among the well-to-do. In the opinion of the executive committee of the *Aerztekammer*, a special organization should be created to look after needy physicians, as the ordinary aid fund of a Prussian *Aerztekammer* is not adequate to the task. To be entitled to aid, physicians must have three years' residence in Berlin, must be eligible to membership in the *Aerztekammer*, and must not be recipients of a pension. Recipients of aid shall receive such a sum as shall be necessary to raise their income to 3,000 marks ($714) annually. The funds for the project it is proposed to obtain by a 10 per cent. increase in the annual dues of the members of *Aerztekammern*. Certain physicians shall be exempted from the payment of such dues: (1) those who are recipients of a pension; (2) those whose annual income is under 3,000 marks, and (3) those who are exempt from the regular dues of the *Aerztekammer*. The *Aerztekammer* adopted these proposals by a large majority. Before they can become effective, however, they must be approved by the supervisory board.

Health Measures in Aid of Federal Health Insurance

The Reichstag has passed the following legislation:

The federal government may, after hearing the arguments of the insured and the panel physicians, or of their representative leagues, by and with the consent of the federal council and a committee of the Reichstag, composed of twenty-eight members, adopt regulations concerning the medical treatment under federal health insurance and pertaining to the general measures bearing on the insured for the prevention of premature industrial incapacity or invalidity or for the betterment of health conditions among the insured population. Such regulations shall, furthermore, serve to determine the relations of the holders of federal health insurance among themselves and with the recipients of public and private welfare treatment in the fields of therapeutics and of social hygiene.

Marriages

KENNETH DAWSON GRAVES, Pearisburg, Va., to Miss Margaret Stringfellow Burwell of Roanoke, Nov. 4, 1925.

CHARLES RALPH OZIAS, Kansas City, Mo., to Miss Mary Ester McCarthy of Chicago, Nov. 25, 1925.

RANDOLPH MOORE GILLIAM to Miss Frances Geraldine McLaine, both of Baltimore, Sept. 8, 1925.

ROLAND SPUHLER CRON to Miss Florence Marie Schroeder, both of Milwaukee, Nov. 19, 1925.

FRANK E. DAVES to Miss Adelaide Simpson Bradley, both of Danville, Va., Oct. 12, 1925.

Deaths

Henry Crain Tinkham ✠ Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1883; dean and professor of clinical surgery and applied anatomy at his alma mater; on the staffs of the Mary Fletcher Hospital, Burlington, and the Fanny Allen Hospital, Winooski; aged 69; died, Dec. 6, 1925.

William H. Purdy ✠ Mount Vernon, N. Y.; Bellevue Hospital Medical College, New York, 1878; past president and secretary of the Westchester County Medical Society; health officer of Mount Vernon; aged 50; died, Dec. 16, 1925, of lobar pneumonia.

William Samuel Cock, Whiteville, Tenn.; Memphis Hospital Medical College, 1893; member of the Tennessee State Medical Association; formerly on the staff of the Western Hospital for the Insane, Bolivar; aged 61; died, Dec. 6, 1925.

William Turner Patterson, West Plains, Mo.; Rush Medical College, Chicago, 1884; aged 61; died, Sept. 13, 1925, at the Lincoln Hospital, Rochelle, Ill., of injuries received when the automobile in which he was driving was struck by a train.

Donald MacCulloch Gedge ✠ San Francisco; Cooper Medical College, San Francisco, 1892; assistant medical director of the Metropolitan Life Insurance Company of New York; aged 64; died, Dec. 5, 1925, of acute dilatation of the heart.

Nels Christian Nelson ✠ Eugene, Ore.; Northwestern University Medical School, Chicago, 1905; president of the Lane County Medical Society; member of the Pacific Coast Oto-Ophthalmological Society; aged 50; died, Nov. 1, 1925.

John Addison Patterson, Washington, Pa.; Medical College of Ohio, Cincinnati, 1875; member of the Medical Society of the State of Pennsylvania; formerly on the staff of the Washington Hospital; aged 82; died, Dec. 7, 1925.

Wallace Howd McLarty, Columbus, Miss.; University of Pennsylvania School of Medicine, Philadelphia, 1923; member of the Medical Society of the State of Pennsylvania; aged 27; was found dead in bed, Nov. 28, 1925.

John William Holmes, Pulaski, Va.; University of Maryland School of Medicine, Baltimore, 1882; member of the Medical Society of Virginia; justice of the peace; aged 77; died, Dec. 5, 1925, at Kenova, W. Va.

Daniel Martin Brickey, Manbar, W. Va.; University of Louisville (Ky.) School of Medicine, 1911; member of the West Virginia State Medical Association; aged 44; died, Nov. 18, 1925, of cerebral hemorrhage.

Carlus E. Wilkinson, Bruceton Mills, W. Va.; Kentucky University Medical Department, Louisville, 1904; member of the West Virginia State Medical Association; aged 48; died, Nov. 23, 1925.

Michael J. Dwyer ✠ St. Louis; Beaumont Hospital Medical College, St. Louis, 1899; formerly superintendent of the Robert Koch Hospital; aged 65; died, Dec. 8, 1925, of bronchial asthma.

William Edward Staggs, Merriam, Kan.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Mo., 1902; aged 51; died suddenly, Dec. 9, 1925.

Richard Dana Bell ✠ Boston; Medical School of Harvard University, Boston, 1913; assistant professor of biological chemistry at his alma mater; aged 38; died, Dec. 6, 1925, of heart disease.

John M. Lavin, Sarasota, Fla.; Rush Medical College, Chicago, 1901; formerly on the staff of St. Joseph's Hospital, Chicago; served during the World War; aged 56; died, Dec. 7, 1925.

Joshua H. Austin, Morgantown, Ky.; Kentucky School of Medicine, Louisville, 1898; member of the Kentucky State Medical Association; aged 54; died, Dec. 11, 1925, of heart disease.

Samuel Edward Moore, Brooklyn; University of Buffalo (N. Y.) Department of Medicine, 1895; on the staff of the Ridgewood Sanitarium; aged 55; died, Dec. 8, 1925, of heart disease.

Joseph MacDonald, New York; Medico-Chirurgical College of Philadelphia, 1903; member of the Medical Society of the State of New York; aged 48; was found dead, Dec. 5, 1925.

✠ Indicates "Fellow" of the American Medical Association.

Charles Fry, Tipton, Mo.; Barnes Medical College, St. Louis, 1893; member of the Missouri State Medical Association; aged 58; died, Dec. 2, 1925, following a long illness.

George M. Romig, Allentown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1868; aged 80; died, Dec. 6, 1925, of injuries received in a fall from a window.

John C. Fretz, Waterloo, Ind.; University of Michigan Medical School, Ann Arbor, 1885; member of the Indiana State Medical Association; aged 69; died, Oct. 26, 1925.

George Ford Meeser, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1870; aged 77; died suddenly, Dec. 9, 1925, at Avalon, N. J.

Phillip J. Loranger ✠ Detroit; Detroit College of Medicine and Surgery, 1897; member of the board of health; aged 54; died, Dec. 8, 1925, following a long illness.

Gordon T. Alley, Charlottetown, Prince Edward Islands, Canada; McGill University Faculty of Medicine, Montreal, Que., 1899; died suddenly, Oct. 31, 1925.

James M. Peerson, Florence, Ala.; Vanderbilt University Medical Department, Nashville, 1891; aged 62; died suddenly, Dec 4, 1925, of cerebral hemorrhage.

Thomas Henry Crawford, Calgary, Alta., Canada; Trinity Medical College, Toronto, Ont., 1900; aged 54; died, Oct. 24, 1925, at the Holy Cross Hospital.

John Peach, Mitchellville, Md.; University of Maryland School of Medicine, Baltimore, 1857; aged 90; died, Dec. 6, 1925, following a long illness.

Clifford T. W. Sappington ✠ Oxford, Md.; University of Maryland School of Medicine, Baltimore, 1903; aged 45; died suddenly, Nov. 29, 1925.

Joseph George Tomkins, San Francisco; California Eclectic Medical College, Los Angeles, 1891; aged 90; died, Dec. 5, 1925, of lobar pneumonia.

Bertram Harvey Wagnon ✠ Atlanta, Ga.; Atlanta School of Medicine, 1911; on the staff of the Noble Infirmary; aged 41; died, Dec. 7, 1925.

Charles B. Lee ✠ Glen Jean, W. Va.; Louisville (Ky.) Medical College, 1891; aged 58; died, Dec. 3, 1925, at Philadelphia, of heart disease.

Oliver Fisher, Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1883; aged 68; died, Dec. 3, 1925, of heart disease.

Marcellus Whitney, Gainesville, Ky.; Vanderbilt University School of Medicine, Nashville, 1880; aged 71; died, Dec. 3, 1925, of pneumonia.

John Ball, San Francisco; California Eclectic Medical College, Los Angeles, 1894; aged 78; died, Dec. 8, 1925, of chronic myocarditis.

Alfred Yost Gerhard, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1876; aged 74; died, Dec. 6, 1925.

Charles Orrin Baker, Fort Madison, Iowa; University of Michigan School of Medicine, Ann Arbor, 1878; aged 76; died, Dec. 3, 1925.

Gerson Feigenbaum, San Antonio, Texas; Baltimore University School of Medicine, 1900; aged 58; died, Dec. 3, 1925, of heart disease.

George W. Holdren ✠ Kingston, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 63; died, Dec. 8, 1925, following a long illness.

Horace Gilbert Bidwell, Jersey City, N. J.; Bellevue Hospital Medical College, New York, 1872; died, Dec. 6, 1925, at Tampa, Fla.

Edmund George McSweeney, Brockton, Mass.; L.R.C.P., L.R.C.S., Edinburgh, L.F.P.S., Glasgow, 1891; aged 62; died, Dec. 10, 1925.

R. Charles Hart, Indianapolis; University Medical College of Kansas City, Mo., 1903; aged 45; died, Dec. 1, 1925, of heart disease.

Hamilton H. Wilcox, Hot Springs, S. D.; Medical College of Ohio, Cincinnati, 1882; aged 75; died, Dec. 10, 1925, of heart disease.

Clarence Alphonso Lindsay, Xenia, Ohio; Ohio State University College of Medicine, Columbus, 1916; aged 34; died, Dec. 10, 1925.

Dirk R. Meengs, Grand Rapids, Mich.; Rush Medical College, Chicago, 1885; aged 75; died, Dec. 4, 1925, of heart disease.

James Thomas Blackburn, West Point, Ky.; Kentucky School of Medicine, Louisville, 1887; aged 60; died, Dec. 8, 1925.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE HOXIDE CANCER "CURE"

A Chamber of Commerce Sponsors the Nostrum of a Horse-Doctor

There is being exploited from the town of Taylorville in central Illinois a "cancer cure" put out by one Harry M. Hoxsey and sponsored by the Chamber of Commerce of Taylorville. The treatment, a secret one of course, is administered by a concern calling itself the Hoxide Institute. The "Institute" operates what it is pleased to call a sanitarium from a building that until recently belonged to the local Order of Moose, but has been purchased from that organization so that the exploiters of this cure might have some place in which to receive their victims.

The history of Hoxide is typical of cancer quackery. It originated with the father of Harry M. Hoxsey, one John C. Hoxsey, a quack now dead, who used to dub himself "doctor." Hoxsey senior seems to have dabbled in veterinary medicine, faith healing and cancer curing. Ten or fifteen years ago John C. Hoxsey, with two others, was indicted by the Montgomery County (Ill.) grand jury on the charge of attempting to blackmail a dentist of Litchfield. Following the indictment Hoxsey disappeared, although the two coconspirators were convicted and punished. Hoxsey evaded arrest for some months when he was jailed until he furnished the $5,000 bail required. He, apparently, escaped punishment. John C. Hoxsey died in 1919; cause of death—Cancer!

THE NATIONAL CANCER RESEARCH INSTITUTE

Following the death of Hoxsey senior, nothing further was heard of the alleged cancer cure until 1924 when Henry M. Hoxsey formed with one Dr. Bruce Miller and an insurance man, Lucius O. V. Everhard, a common law trust having the somewhat imposing name "National Cancer Research Institute and Clinic."

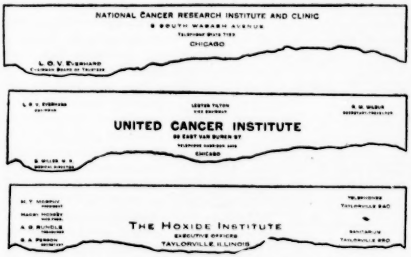
Everhard, who, apparently, was the brains of the promotion end of the business, has been connected at various times with alleged insurance companies. In 1910 and 1911 his name appeared in the Chicago directories as a "broker." In 1914 he was styled "insurance superintendent." In 1915 he was "President of the Superior Life Insurance Company." From information obtained from the Division of Insurance of the State of Illinois, the Superior Life Insurance Company never seems to have passed the promotion stage. A Rockford, Illinois, physician writes that the company was merely a stock-selling scheme with doctors and dentists as the principal victims. At that time the State of Illinois had practically no supervision over insurance companies in process of organization. Later L. O. V. Everhard was "President of the Drexel Mutual Life Insurance Company." The company's offices seemed to have been under Everhard's hat. As this Drexel outfit has failed to comply with the state laws the Superintendent of Insurance of Illinois has referred the matter to the Attorney General of the state with a request that he proceed for a receivership.

Bruce Miller, M.D., the physician connected with the National Cancer Research Institute and Clinic, seems to have received a diploma from the College of Physicians and Surgeons, Chicago, nearly forty years ago. If he has ever practiced medicine until he took up the cancer cure business, we are unable to find record of it. Information has come to us that he has been in the stepladder business.

As already stated, the National Cancer Research Institute and Clinic was recorded in May, 1924, as a common law trust in Chicago. It was originated by Harry M. Hoxsey who appointed three trustees, Bruce Miller, L. O. V. Everhard and himself. These trustees were vested with broad powers in connection with the management of the trust, including the disposition of the profits in any way they might elect.

The declaration of trust states that Harry Hoxsey is the "owner and possessor of a secret formula for the compounding of a treatment for cancer," and that this treatment is "something entirely new in medicine." By the terms of the declaration, Hoxsey divested himself of all right to use the formula except as a trustee with the other trustees of the trust estate. He also agreed that he would not use the formula nor permit any one else to use it or reveal the secret of the formula to any person.

By the terms of the same trust it was declared that "beneficial interests" might be issued not to exceed 5,000, of which 3,000 were to be issued to Hoxsey. The three trustees were given power to fix the price at which these beneficial interests should be sold and to increase that amount as they saw fit. But no beneficial interests were to be issued for less than $100. However, a provision was inserted at this point to the effect that the trustees might donate beneficial interests "to persons whose influence may be of value to the trustees in establishing hospitals or otherwise increasing the value of the trust estate." The owners of certificates of beneficial interests were not entitled to any title in the property or to the right to call for a division of the property or for even an accounting! Furthermore, the three trustees by the terms of the trust were to fix the compensation of any or all officers and were "to pay to themselves out of the trust estate such



The history—so far—of the resurrected cancer cure of Quack J. C. Hoxsey, told in letter-heads.

a compensation for their own services as trustees as they deem reasonable, and their judgment in this respect shall not be questioned."

Hoxsey, Miller and Everhard began operations in Chicago, and reports came in that they were claiming that their "cure" was being used in highgrade Chicago hospitals and by physicians of unquestioned professional standing. Investigation proved that these claims were false. With such persistency, however, were these falsehoods circulated that it became necessary for the physicians whose names were being thus misused to issue a disclaimer, and the following "Warning" was published in the *Illinois Medical Journal*, October, 1924:

> "It has come to our attention that a promoter by the name of Everhard, under the name of the 'National Cancer Research Institute and Clinic' has been using our names in connection with the promotion of an alleged cancer cure. We wish to warn all persons that no confidence should be placed in the promoter, the institute or the alleged cure under any representation in which our names are used, as they have been used entirely without our knowledge or consent."

THE UNITED CANCER INSTITUTE

As the medical profession began to learn about the National Cancer Research Institute and Clinic, the business of that organization waned. Early in 1925 it was reported that Everhard and Miller had decided to eliminate Hoxsey and use instead the "cure" of an Iowa quack, one Lester Tilton of Clinton. The name of the new piece of fakery was "United Cancer Institute," with Everhard for chairman, Miller for medical director, one Romeo M. Wilbur for secretary-treasurer and Quack Tilton for vice-chairman.

Tilton has long exploited his "cancer and blood poison treatment" in a method typical of the cancer cure quack.

The United Cancer Institute had but a short life, and at the present time, January, 1926, we are unable to learn just what scheme is occupying the attention of Wilbur, Everhard or Bruce Miller.

"SELLING" TAYLORVILLE

When the cure "blew up" in Chicago Hoxsey went back to his old stamping ground in central Illinois, and the next that was heard was that Hoxsey and a high-pressure promoter, one H. T. Morphy, were down in Taylorville, Illinois, trying to get that town interested in the establishment of a cancer cure sanitarium. The local newspapers boosted the scheme—and later got full-page advertisements of the "sanitarium." During the preliminary stages Promoter Morphy, whose business it was to "sell" the Hoxsey cancer cure idea to Taylorville, was described in the local newspapers as "H. T. Morphy of London and Chicago," "Chairman of the Board of Trustees for the National Cancer Research Institute." A careful search of the Chicago directories for more than twenty years past fails to show any one by the name of H. T. Morphy. Twenty-two years ago the directory did contain the name of one "Hubert T. Morphy, theatrical agent."

ALL WORLD WILL SOON BEAT PATH TO TAYLORVILLE

All the world will soon be beating a path to Taylorville, site of the Hoxide Cancer Sanitarium, when prejudices are cast aside and a sincere effort on the part of the medical profession is made to learn the true merits of the Hoxide cure for cancer, which is astounding, to say the least.

The main line of argument used by Morphy and those interested in foisting quack J. C. Hoxsey's resurrected nostrum on Taylorville has been that if a sanitarium were founded in that town it would not be long, as the local paper stated in black-face type half an inch high, before "All World Will Soon Beat Path to Taylorville." Or, as Morphy was quoted as saying: "They'll come from far and near and each of them will spend money here."

How the local newspapers react to Hoxsey's cancer cure.

The local medical profession in Taylorville, as is usual in such cases, did its best to discourage the establishment of this quack institution, and, as also is usual, was bedamned for its pains. At the time that Morphy was holding his mass meetings in order to put his scheme "across," he complained that he was "experiencing considerable trouble" due to "a strong undercurrent of opposition to the movement."

There is a large house in Taylorville, which, according to the local papers, was built some fourteen years ago and sold four years later to the local Moose Order for $13,500. The building appears to have become a white elephant on the hands of the Moose and, from the newspaper reports, they were anxious to get rid of it. They got rid of it—to Morphy, Hoxsey, et al.—for $15,000.

THE TAYLORVILLE CHAMBER OF COMMERCE

Edward H. Bach, a "Past Dictator" of the local Moose lodge, who seems to be in the shoe business in Taylorville, calls himself "Secretary of the Taylorville Chamber of Commerce." We are advised that, in fact, the Taylorville Chamber of Commerce was a defunct organization apparently resurrected for the purpose of exploiting the Hoxide cancer cure. Bach is credited with having secured authority from the national Moose organization to sell the Taylorville Moose Home and the local newspaper claims that it was due to his efforts "that the deal has been closed." Mr. Bach is now busily engaged in trying to place advertisements in newspapers over the country, urging those who are suffering from cancer to apply to the Chamber of Commerce of Taylorville for authoritative information as to the "cures that have been effected." These "cures," according to the same advertisement "are now being effected at Taylorville under strictly ethical medical supervision, painlessly, without operation, and with permanent results."

It must be borne in mind that these advertisements are submitted, not by—or at least not in the name of—the Hoxide Institute, but in the name of what appears to be a reputable civic organization, the Chamber of Commerce of Taylorville, Illinois, whose stationary bears the names of its officers, including the Mayor and various bank presidents. It is unthinkable that these representative citizens of a respectable community can realize the character of the business to which they are lending their names and influence.

H. T. Morphy has a brother in San Francisco, one E. A. Morphy. As long ago as last April, Morphy told the world—through the local papers—that he would go out to the coast and secure funds for further exploitation of the Hoxide cancer cure, and when out there "would send Dr. Keeney, famous specialist of the Western coast" to Taylorville to study the Hoxide cure. Dr. Keeney, whose full name is Homer I Keeney, late of Portland, Oregon, and San Francisco, California, has come, seen and been conquered. The name of Keeney seems to be one to conjure with, and the Hoxide outfit are printing in local papers what purport to be telegrams from people of the Pacific coast lauding the doctor. Taylorville is also advised:

"Dr. Homer I. Keeney of San Francisco, noted surgeon and authority on cancer disease is in Taylorville and has just completed a thorough investigation of the claims made by the Institute."

The paper states further that Dr. Keeney is in no way connected with the Hoxide Sanitarium and "came here of his own accord"—which seems to indicate that the editor has forgotten what he published last April.

Nor is this the only way in which Keeney's name is being used as an asset to those who know nothing about him. The decent newspapers to which the Taylorville Chamber of Commerce submits advertisements naturally refuse them because every publisher who has intelligence enough to run a paper knows that advertised cancer cures are always and invariably cruel fakes. When the advertisements are refused, Mr. Bach comes back with a two-page letter in which he accuses the local physicians of Taylorville of acting in an unprofessional way, and states that Dr. H. I. Keeney, who "has been making an investigation of cancer throughout the United States" had visited Taylorville and has asserted that "in Hoxide we have a specific for cancer." With this letter of Bach's is what purports to be a copy of a telegram coming from E. A. Morphy of San Francisco and typed on Western Union telegram forms. In his telegram E. A. Morphy states that Homer I. Keeney "is better posted on cancer than most men on this coast" and closes his telegram with the statement: "I know Hoxide is specific for cancer."

In a Taylorville paper for December 19 there appeared a news item headed "DR. KEENEY WINS APPROVAL STATE MEDICAL BOARD. METHODS OF HOXIDE CANCER INVESTIGATOR APPROVED BY CALIFORNIA MEDICS." The item then states that a telegram received at Taylorville on that day declares that Homer I. Keeney went before the Secretary of the State Medical Board of California and "explained what he had found here, and received the approval of that official." Any one, of course, who is familiar with the Secretary of the State Medical Board of California knows that the statement that that official approved of the Hoxsey cancer cure is a falsehood made up out of whole cloth.

On December 10, 1925, the Hoxide Institute entered into an agreement giving H. T. Morphy power to negotiate contracts whereby the Hoxide treatment could be used in the British Isles. Morphy is to pay the Hoxide Institute 20 per cent of the net profits and the Hoxide Institute will furnish Morphy a sufficient quantity of the "treatment" necessary for the use of those British concerns that may go into this delectable line of business.

In the agreement, referred to above, it is declared that Morphy, Hoxsey and S. Arvid Person are the successors in trust to Hoxsey, Bruce Miller and L. O. V. Everhard and own and control all the rights of the National Cancer Research Institute and Clinic. S. Arvid Person is a chiropractor. His name appears in the files of the Bureau of Investigation as the "Grand Chapter Master" of a seriocomic outfit, Omicron Sigma Phi, which, apparently, was an imitation Greek letter fraternity to which all "students and graduates" of the evil smelling institution, the "National University of Sciences," were eligible for membership. The National University of Sciences will be remembered as the

CANCER Any person suffering from this malady, or otherwise interested in its treatment, is invited to apply for authoritative information as to the cures that have been effected and are now being effected at Taylorville, under strictly ethical medical supervision, painlessly, without operation, and with permanent results. Address: The Secretary, Chamber of Commerce, Taylorville, Ill.

This is the advertisement that the papers of the country are asked to print. It is sent out in the name of the Taylorville Chamber of Commerce. Who pays for it we have not learned. Decent newspapers are, of course, turning it down.

diploma-mill run by Charles C. Faiman, whose unsavory record, in part, was brought out, during the notorious Shepherd case. Faiman was treasurer of "Omicron Sigma Phi" while S. Arvid Person was "First Vice-President" of the National University of Sciences.

There is a physician connected with the Hoxide Institute, one Albert T. Washburn. This, apparently, is for the purpose of protecting the "Institute" from prosecution under the state law. According to our records, Albert T. Washburn was born in 1871, received his premedical education at the Chicago public schools and was granted a diploma by the Chicago Homeopathic Medical College in 1891. He was licensed in the state of Illinois a year later. In 1893 he was practicing at Gilbertville, Indiana. He then seems to have moved to Chicago, but by 1902 was at Lexington, Illinois. In 1906 he was back again in Chicago, where he has been continuously until he took his present job. In June, 1925, Washburn entered into an agreement with the Hoxide Sanitarium to devote his entire time exclusively to this concern for a period of ten years. For this he was to get $300 a month for the first six months with an increase of $50 a month for each six months period thereafter. He was also to get "One Hundred Beneficial Interests in the National Cancer Research Institute and Clinic."

THE "CURE"

What is the Hoxide cure? Essentially the escharotic treatment with arsenic as the base. Specimens of the stuff used when the Hoxsey outfit was in Chicago were examined in the Association's laboratory and arsenic in large quantities was found. What happens, of course, can easily be imagined by physicians, but unfortunately the public has no such knowledge. In the case of some of the patients that were treated in Chicago by the National Cancer Research Institute and Clinic the arsenic applied to the malignant tissue ate into the blood vessels and the patients bled to death. One of the leading physicians of Taylorville wrote to THE JOURNAL more than a year ago in answer to a request for information, and stated that the first information he had concerning the Hoxsey cancer cure "was from an undertaker who showed enthusiasm about the matter." He stated further that Hoxsey senior had treated cases in that community for many years, always calling all cases cancer, but actually treating any verrucous condition that was submitted. The same physician reported a case that came to his attention of a patient who had been treated by the Hoxsey method for a tumor of the cheek. Two days before the man died our correspondent was called in and found necrosis not only of the soft tissues of the face but a complete destruction of the malar bone. The man died of hemorrhage. Another case that came to the attention of the same physician was one of carcinoma of the clitoris. As the doctor stated, "this stuff destroyed the bladder wall, the pubic bones and caused quite a mess." Of course it ended fatally.

In the Hoxide Institute the history of cancer cure quackery doubtless will repeat itself. Scores and probably hundreds of people with non-malignant or superficial growths will subject themselves to the caustic treatment. They will, of course, have these growths removed. It will be, however, at the expense of a greater outlay of money, time and pain than would have been the case had the operation been performed by their home physician under local anesthesia. One such case, in fact, figures in the testimonial booklet sent out by the Chamber of Commerce: A young man with a small fatty tumor in his arm, refusing to believe reputable local physicians, had it burned out by the Hoxide concern. He now testifies that he was cured of cancer! There will also be the usual proportion of individuals showing the ravages of tertiary syphilis. If the medical brains of the Institute are sufficient to recognize the condition, it will be a simple matter to ply these patients with iodids, at the same time making local applications of the arsenical powder or paste. These cases, too, will, in some instances, clear up.

On such cases we need waste little sympathy. In those, however, of sufferers from carcinoma who are beguiled by the false beacons displayed by the highly respectable citizens of Taylorville into coming to the Hoxide Institute for treatment, the story will be one of tragedy. In time, of course, the weight of experience will overcome the force in advertising and then the Hoxide Institute will close its doors. In the meantime the promoters of the scheme will have reaped a rich harvest from gullibility and suffering.

Correspondence

CHICAGO MEDICAL SOCIETY RESOLUTIONS ON PUBLIC HEALTH OFFICIALS

To the Editor:—THE JOURNAL, November 21, under news, contains a somewhat lengthy resolution adopted by the council of the Chicago Medical Society, November 10, which is so misleading that I should like an opportunity to correct it.

The resolution in question begins as follows:

WHEREAS, the American Public Health Association at its annual meeting in St. Louis in October, 1925, listened to an address by one of its members favoring a new doctor in each community where a health officer is needed to be known as a Doctor of Public Health.

It closes as follows:

Resolved, That the Chicago Medical Society views with displeasure any move on the part of the American Public Health Association which may express a desire to replace physicians as health officials by laymen with D.P.H. licenses.

Resolved, That a copy of this resolution be sent to the American Public Health Association, to all those institutions of learning where courses in public health are given with a view to conferring a D.P.H. degree, and to every state medical society with a request that the component county societies be made acquainted with the proposed activities of a public health association whose president is a layman.

As president of the American Public Health Association, I should like to say that no such address was delivered at St. Louis, that no such desire to replace physicians as health officers by laymen has ever been expressed at any meeting of the association, and that there are no "proposed activities" whatever along this line in the American Public Health Association or, so far as I am aware, outside of it.

What all competent public health workers are interested in is the securing of health officers who have devoted sufficient time to the specific problems of public health administration to qualify them to fulfil their official duties, a task of the greatest difficulty.

The "D.P.H. license" mentioned in the resolution may possibly refer to the Diploma in Public Health, which is extensively given in England and Canada but which is not in existence in this country. It is, as far as I am aware, always given as a postgraduate course to men who have already completed their medical studies. The same thing is, in general, true with regard to the degree of Doctor of Public Health, which is the higher degree generally given in this country to those specializing in this field. There are two or three universities which open the courses for this degree to men who have completed the first two years of the medical course, but most of them require the full medical course as a prerequisite. The doctorate in public health, as it is given under my direction here at Yale, is, for example, a two years' course open only to those who already possess the degree of M.D. "The layman" now serving as president of the American Public Health Association is strongly of the opinion that the city and state health officer should wherever possible be a physician with additional training in public health.

C.-E. A. WINSLOW, New Haven, Conn.
President, American Public Health Association;
Professor of Public Health, Yale School of Medicine.

INTESTINAL INFLUENZA AND B. SUIPESTIFER

To the Editor:—Apropos of the letter of Dr. C. J. Snitkay (THE JOURNAL, Dec. 19, 1925) in regard to intestinal influenza, in September, 1925, the London (England) School of Tropical Medicine examined the stools of certain persons suffering with the symptoms of so-called intestinal influenza, and isolated *Bacillus suipestifer*. These sick persons were former patients of mine. Several weeks before leaving America for England, en route for India, they had received the usual antityphoid inoculations.

At the time they left Minnesota we were having much intestinal influenza with a group of symptoms consisting (in a typical case) of fever, nausea, vomiting, gastric and intestinal pain, and diarrhea. The stools were offensive and contained much mucus and a varying amount of blood. Not all cases showed all the symptoms mentioned, but a sufficient number of them to warrant their classification under the same head.

The patients became sick on the boat, not all at the same time, but at intervals of a few days. Two little boys in the party were ill at the time of the boat's arrival in London, and were removed to the hospital, where the examination of the stools was made. The mother, who had been sick before the boys, but merely with diarrhea, became ill again after landing, the symptoms being identical with those of the two boys. ERNEST W. COWERN, M.D., North St. Paul, Minn.

CHILOMASTIX MESNILI ON LETTUCE

To the Editor:—In THE JOURNAL, October 24, p. 1288, in the abstract of discussion of the paper of Dr. Herman Bundesen on raw foods, appeared the statement of Dr. F. C. Johnson, New Brunswick, N. J., that he had observed a case of colitis develop following the eating of California lettuce.

I communicated with Dr. Johnson, and found that he referred to a technician as being a student of Dr. Kofoid of the University of California. I have communicated with Dr. Kofoid, and present a copy of his reply.

Out of justice to the lettuce industry of California, and in order that your readers may not have any misapprehension regarding the lettuce grown in California, may I ask that you give Dr. Kofoid's letter publicity.

W. M. DICKIE, M.D., Sacramento.
Secretary, California State Board of Health.

Dear Dr. Dickie:—The statement made in Dr. Johnson's discussion of the article by Dr. Herman Bundesen on raw foods, which implies that the parasite *Chilomastix mesnili* is abundant on California lettuce, is an error. The parasite lives only in the human digestive tract, never lives on or in lettuce in any form, and dies very quickly in the motile stage at temperatures below that of the human bowel. It does not live in fresh water or soil. The parasite is transferred from person to person by family infection and the soiling of wash bowls in washing hands, fouled with human feces. The encysted stage might survive for a brief time in soil or water, but so far as we know fecal infection is the only route by which this and other intestinal protozoa are transferred from one person to another.

As you doubtless know, the laws in California regarding the use of night soil in gardens are strict, and also that lettuce is grown in California fields under the most hygienic conditions and in the brilliant sunshine, which is lethal to most if not all disease germs.

Chilomastix mesnili has never been found in any domestic animals and would not be transferred by the use of fertilizer derived from domestic animals. C. A. KOFOID, Berkeley, Calif.

Department of Zoology, University of California.

SCIENTIFIC PREDICTIONS OF NOVELISTS

To the Editor:—The recent advertisement of a book on "Aviation Medicine" (THE JOURNAL, Dec. 12, 1925, p. 28) recalls several of the advertisements appended to Rudyard Kipling's "With the Night Mail," a story of 2000 A. D. As there prophesied, some of the books of the future will be: "Air Currents and Epidemic Diseases"; "Disease and the Barometer"; "Health Resorts of the Gobi and Shamo"; "High Level Bacteriology."

One of the characters in that fantastic tale of life in the air remarks:

> I've read in a book that savages [meaning twentieth century people] used to haul their sick and wounded up to the tops of hills because microbes were fewer there. We hoist 'em into sterilized air for a while. Same idea.

Thus do the speculative novelists keep in the vanguard of progressive medicine.

LOUIS J. BRAGMAN, M.D., Syracuse, N. Y.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESUSCITATION

To the Editor:—Using the prone method for resuscitation, as you have recommended, what information can you give on the following points: How long can a body remain in water and yet be successfully resuscitated? What are some of the records relative to length of time the prone method has been exercised before the victim became conscious? The questions apply to drowning. Please also advise regarding resuscitation from electric shocks. H. N. MUNGER, New York City.

ANSWER.—In THE JOURNAL, Sept. 6, 1924, pages 756-765, appeared three articles on resuscitation:

Maclachlan, Wills: Resuscitation after Electric Shock.
Henderson, Yandell: Resuscitation from Carbon Monoxid Asphyxia, from Ether or Alcohol Intoxication, and from Respiratory Failure Due to other Causes; with some Remarks also on the Use of Oxygen in Pneumonia, and Inhalational Therapy in General.
Drinker, C. K.: Artificial Respiration in Electric Shock and Gas Poisoning.

As to method, the attitude of these writers is expressed in the conclusion of the third article:

"When we give all these methods a competent analysis, we are reduced to the selection of the prone pressure method of resuscitation as our great reliance for immediate emergency, and we turn to the oxygen-carbon dioxid inhalation method devised by Henderson and Haggard as the physio-

logic antidote for carbon monoxid asphyxia, and through simple inhalation apparatus practically allow the patient to administer this mixture to himself."

In the discussion following the papers of Maclachlan and Henderson, cases of resuscitation two and a half hours after electrical shock and cases of resuscitation after men had been submerged for from fifteen to twenty minutes were cited, in the latter one hour and five minutes elapsing before resuscitation.

Maclachlan recommended that artificial respiration should be continued without interruption (if necessary for four hours) until natural breathing is restored. "Cases are on record," he said, "of success after three and one-half hours of effort. The ordinary tests for death are not conclusive in cases of electrical shock."

As regards the length of time that a man may be completely submerged and then revived: It appears that considerable variations occur; but as the efficiency of the methods of resuscitation employed has varied greatly, it is difficult to decide whether the variations in the results are in the victims or in the procedures employed by the rescuers. It is probable that absolutely complete submergence for ten minutes, and perhaps less, may so far impair the respiratory center or bring the heart so completely to a standstill as to make the possibility of resuscitation doubtful. In cases in which persons are resuscitated after being in the water for fifteen or twenty minutes, it is probable that submergence is incomplete and that some partial breaths of air are obtained.

TREATMENT OF LICHEN PLANUS

To the Editor:—For the last four years I have been suffering from lichen planus. For a while it yields to treatment, but it recurs, perhaps as an anaphylactic reaction to meat, fish and even the slightest amount of alcohol, or any strenuous work or mental effort. Itching is especially troublesome. I have secured some relief with injections of cacodylate and autohemotherapy, but I should like to get some expert opinion as to prognosis and possible cure. There is no hereditary syphilis or alcoholism. I am 39 years old. Please omit my name.

M.D., Mexico.

ANSWER.—The most effective treatment for lichen planus consists in the intramuscular injection of 25 minims (1.5 cc.) of a 1 per cent solution of mercuric chlorid in physiologic sodium chloride solution twice weekly. From twelve to twenty-five injections must be given. Practically every case will yield sooner or later to this treatment if properly carried out. Internally, the use of arsenic and mercury combined will be found beneficial; but these drugs should not be given with the injections.

Areas that are especially troublesome because of itching or of visibility can be removed, as a rule, with roentgen rays. The dosage should be about one-half skin unit every ten days for three doses, if necessary.

Exposure of the lumbar spine to the proper dosage of roentgen rays has been reported recently to be almost a specific by several French writers (*Bull. Soc. de dermat. et. syph.*, 1925, p. 6).

VITAMIN — FRACTURE OF THE FEMUR

To the Editor:—Please give me authoritative answers to the following: 1. Pronunciation of vitamin. 2. In fracture of the femur, using direct bone extension, at what earliest age is it safe to apply calipers to the condyles? Please omit my name if published.

M.D., Illinois.

ANSWER.—1. According to the Standard Dictionary, vitamin is pronounced vī'ta-min".

2. In growing children, that is, up to the time the epiphyses unite, and after which time no more longitudinal growth occurs, it is imperative to avoid the region of the condyles with any caliper or similar device to obtain a direct bone traction, because of the danger of injuring the epiphyseal cartilage and thus interfering with the normal growth. The calipers should be inserted one fingerbreadth above the epicondyle, for the epiphyseal line is located almost exactly on a level with the epicondyle.

In infants, calipers are not indicated. In infants, Matti's technic is practical. Matti hangs the extremity in the usual Schede vertical suspension, using a pulley and weights, the former being suspended on a metal arch over the bed. A Balkan frame, such as is found in most modern hospitals, is convenient. A stockinet is applied to the child's leg and thigh going above the line of fracture, as the pull is on the soft parts, a metal ring is sewed to the distal free end of the stockinet, and to this ring four ropes are tied at equal distances apart, and these four are attached to the rope and pulley. Enough weight is used to hold the child's buttock off the bed. In infants, consolidation will occur in three weeks. Sinclair glue is used to glue the stockinet to the skin of the leg and thigh. This is heated before using and is applied warm. The device is removed by wetting.

RUBBER GLOVES — STERILIZATION FOR PREVENTION OF CONCEPTION

To the Editor:—Please supply me with the following information: 1. Who first suggested the use of rubber gloves in surgery, and who first introduced them? 2. Is it justifiable for a gynecologist, at a woman's request, to sterilize her by an operation on the fallopian tubes: (*a*) if she is perfectly healthy, as a means of preventing conception; (*b*) if she has a condition threatening her health or life?

GEORGE J. STREAN, M.D., Chicago.

ANSWER.—1. According to Garrison's History of Medicine, the rubber glove was introduced in surgery by Halsted in Baltimore, in 1890. However, the following is a quotation from Watson's Practice of Physic, chapter on puerperal peritonitis, p. 819, published in 1858:

> In these days of ready invention, a glove, I think, might be devised, which should be impervious to fluids and yet so thin and pliant as not to interfere materially with the delicate sense of touch required in these manipulations. One such glove, if such shall ever be fabricated and adopted, might well be sacrificed to the safety of the mother in every labor.

De Lee, furthermore, in "Principles and Practice of Obstetrics," edition 4, p. 864, writes:

> Abstention from obstetric practice was enforced on physicians who had a succession of puerperal fever cases, and even the use of impervious gloves was recommended by Steinau in 1855.

2. There is no recorded court decision passing on the liability of a surgeon for sterilizing a patient at her own request for either of the purposes named above. The trend of legal discussion is to the effect that it is at least doubtful whether a man or a woman, in good health, can consent to a sterilizing operation, so as to protect the operator against criminal prosecution, or against civil suit by the patient himself or herself. It is agreed, however, that in cases in which such an operation is reasonably necessary to protect the life or health of the patient, such consent can be given. Probably valid consent can be given, too, to the sterilization of a diseased or defective person when such an operation is necessary to protect the health or life of a healthy spouse or to prevent the birth of diseased or defective children, even though the operation may not be necessary to protect the health or life of the person operated on; but the validity of consent in this case does not seem to be so well assured.

ECZEMA OF THE FINGERS

To the Editor:—Can you help me with a case of eczema of the insides of the fingers? Fine vesicles (white) come out and break laterally; when ruptured, they fill at once, or within fifteen minutes. There is no pain or itching, but they do much harm. Calamine drys them for a while, and then they come back as thick as ever. Soaps seem to irritate. Syphilitic, nerve, gastric and symptomatic treatment have failed. The Wassermann reaction is negative; so is examination of the urine. The patient is 36, a traveler, very nervous and anxious. He eats and sleeps well, and is not troubled with constipation. He is quite fractious and looks as if he might some day go to the madhouse. Please help me out with him. What will cure his fingers?

P. A. BOYKIN, M.D., Jeanerette, La.

ANSWER.—The condition described may be (1) a recurrent toxic eruption, (2) dermatitis venenata or (3) a fungus infection.

1. A recurrent toxic eruption would be characterized by sudden onset, bilateral symmetry and uniformity of the vesicles. The attack would tend to run a definite course, and at a given time the vesicles would all be in the same stage of evolution or involution. A systemic examination for foci of infection, gastro-intestinal disturbance, and sensitization to protein or drugs should be made.

2. In dermatitis venenata, the vesicles would be very superficial and would appear after erythema was well developed. There should be a history of contact with external irritants, such as Japanese lacquer, primroses, dyed fur or chemicals. There would be partial or complete asymmetry, and the onset would occur at the point of contact with the irritant. In some cases it is possible to discover the irritant only by having the patient keep a daily double column of events: in the one, a detailed account of his actions and, in the other, the time and manner of each of the attacks.

3. If a fungus infection, the lesions would consist of deep seated vesicles in various stages of evolution and involution; brown areas representing absorbed vesicles; pink, shiny areas

with collarettes of upturned scales; and desquamation. One hand would probably be more involved than the other. Similar lesions would probably be found between the toes. The fungi would be found microscopically by cutting off the tops of the vesicles, inverting them on a glass slide, covering with 15 per cent sodium hydroxide solution, heating gently, and pressing out the tissue under a cover glass. The fungi are best seen with the high dry objective, and appear as long mycelial threads. If the fungi are found, the condition should yield to the daily application of 10 per cent chrysarobin in solution of gutta percha, N. F. ("traumaticin"). Care should be exercised in the application of this drug, because if the disorder is not due to a fungus, a severe dermatitis might be set up.

SCLERODERMA

To the Editor:—Would you approve of a thyroid gland transplantation for a patient with scleroderma? Thyroid preparations, ultraviolet rays, massage and hydrotherapy have been given a trial with but slight success. Is there any danger of hyperthyroidism after the transplantation? Is there any better method? What is in your opinion the most promising treatment of scleroderma (sclerodactylia)? Please omit my name.

M.D., Michigan

ANSWER.—In some cases of diffuse scleroderma there is perhaps great improvement, even relief, from the use of thyroid substance by the mouth. In other cases it is not efficient. In circumscribed scleroderma (morphea) it is very much less likely to be useful, if it is ever so. This case, from the fact that the patient has sclerodactylia, is probably a diffuse scleroderma. In such a case we would expect thyroid transplantation to be altogether experimental and its consideration hardly warranted unless the patient showed improvement from less drastic thyroid treatment.

TREATMENT OF ACUTE APOPLEXY

To the Editor:—Since those of us who are not only neurologists but also internists differ widely as to the indications for venesection in apoplexy, I thought you would tell us the most commonly accepted views on this question. Also, are there any indications for lumbar puncture in acute apoplexy; or is not such a procedure nearly always contraindicated?

J. F. W. MEAGHER, M.D., Brooklyn.

ANSWER.—Apoplexy is the name not of a disease but of a symptom; the treatment to be adopted depends on the nature of the lesion, and every effort should be made to reach an exact diagnosis. The lesions that most commonly cause apoplexy are thrombosis, hemorrhage and embolism of intracranial blood vessels. In the case of hemorrhage, the blood pressure is often high and the heart action forcible; the pressure within the cranial cavity also is increased by the extravasation of blood. In such cases, cardiac sedation and measures to lower intracranial tension are indicated. It is in these cases that venesection and lumbar puncture may be resorted to. Some authorities even advise a decompression operation and cerebral puncture when the increase of tension is great, as this condition may itself be the cause of death. But the situation is entirely different in cases of thrombosis or embolism. In them the heart action is usually feeble, and thrombosis most often occurs during sleep when the circulatory pressure is lowest. There is also no rise in intracranial pressure, at least not in the earlier stages before inflammatory reactions have occurred. In apoplexy due to thrombosis or embolism, therefore, the indications are for supporting treatment and heart stimulation rather than depletion; venesection and lumbar puncture are absolutely contraindicated. When, however, a patient is found unconscious and other indications are inconclusive, lumbar puncture may at times be performed with the object of securing aid in diagnosis rather than for treatment.

HAIR DYE

To the Editor:—How may one make a good dark brown hair dye that is not dangerous to use?

A. D. GALLOWAY, M.D., Clayton, Wis.

ANSWER.—An infusion of henna leaves (50 Gm. to 1,000 cc. of water) is strained, and evaporated to one eighth of its volume, or about 120 cc. (4 ounces). To this, 60 cc. (2 ounces) of alcohol U. S. P. is added, and the mixture is filtered through paper. To darken, ammonia water is added to the filtrate. It should be tried out carefully before using, to make sure that the shade is the one desired. This is a safe dye. By adding a solution of silver nitrate it can be made still darker; but caution must be used to get none of it on the scalp, or a slight element of danger enters into its use.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 12. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 5-6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, Jan. 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Jan. 12. Sec., Dr. Edgar P. Copeland, Apt. 104, Stoneleigh Court, Washington, D. C.

HAWAII: Honolulu, Jan. 11. Sec., Dr. G. C. Milnor, 401 So. Beretania St., Honolulu.

ILLINOIS: Chicago, Jan. 19-21. Supt. of Reg., Mr. V. C. Michels, Springfield, Ill.

INDIANA: Indianapolis, Jan. 12. Sec., Dr. W. T. Gott, 421 State House, Indianapolis.

KANSAS: Topeka, Feb. 9. Sec., Dr. Albert S. Ross, Sabetha.

MINNESOTA: Minneapolis, Jan. 5-7. Sec., Dr. Thomas S. McDavitt, 734 Lowry Bldg., St. Paul.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, Feb. 10-12; Part II, Feb. 11-12, in Class A Medical Schools. Sec., Dr. J. S. Rodman, 1600 Walnut St., Philadelphia.

NEW YORK: Albany, Buffalo, New York, Syracuse, Jan. 25-28. Chief, Mr. Herbert J. Hamilton, Department of Education, Albany.

NORTH DAKOTA: Grand Forks, Jan. 5. Sec., Dr. George M. Williamson, Grand Forks.

OREGON: Portland, Jan. 5-7. Sec., Dr. N. C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 26-30. Act. Sec., Mr. C. D. Koch, Harrisburg.

RHODE ISLAND: Providence, Jan. 7. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 19. Dir. Med. Licensure, Dr. H. R. Kenaston, Bonesteel, S. D.

UTAH: Salt Lake City, Jan. 5. Director of Reg., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, Feb. 9-11. Sec., Dr. W. Scott Nay, Underhill.

WASHINGTON: Olympia, Jan. 12. Sec., Mr. William Melville, 15 Insurance Bldg., Olympia.

WEST VIRGINIA: Charleston, Jan. 19. Sec., Dr. W. T. Henshaw, State Health Department, Charleston.

WISCONSIN: Madison, Jan. 12-14. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

WYOMING: Cheyenne, Feb. 1-3. Sec., Dr. G. M. Anderson, Cheyenne.

Maine July Examination

Dr. Adam P. Leighton, Jr., secretary of the Maine Board of Registration in Medicine, reports the written examination held at Augusta, July 7-8, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 27 candidates examined, 26 passed and 1 failed. Five candidates were licensed by reciprocity. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Georgetown University School of Medicine	(1925)	85
Boston University School of Medicine	(1925) 79, 81, 84,	84, 84
Harvard University	(1921) 87, (1925)	85, 86.9
Tufts College Medical School	(1925) 78, 80, 82, 83,	83.8, 84.6, 88
University and Bellevue Hospital Medical College	(1925)	84
Hahnemann Med. College and Hospital of Philadelphia	(1886)	75.5
University of Pennsylvania School of Medicine	(1924)	86
Medical College of the State of South Carolina	(1924)	86
University of Vermont College of Medicine	(1924)	87
McGill University Faculty of Medicine	(1923) 82.6, (1925) 83, 85,	83.5, 86.3

FAILED	Year Grad.	Per Cent
University of Montreal Medical Faculty	(1925)	73

LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
State University of Iowa College of Medicine	(1920)	Iowa
Harvard University	(1923)	Illinois
University of Michigan Medical School	(1899)	Penna.
Women's Medical College of Pennsylvania	(1889)	Penna.
McGill University Faculty of Medicine	(1902)	New Hamp.

Virginia June Examination

Dr. J. W. Preston, secretary of the Virginia Board of Medical Examiners, reports the written examination held at Richmond, June 23-26, 1925. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Seventy-three candidates were examined, all of whom passed. Two osteopaths were licensed to practice osteopathy. Eighteen candidates, including 1 osteopath, were licensed by reciprocity, and 4 by endorsement of their credentials. The following colleges were represented:

PASSED	Year Grad.	Per Cent
Howard University School of Med.	(1924) 80, (1925) 83.5,	84, 87
University of Louisville School of Medicine	(1924)	87

Tulane University of Louisiana School of Medicine....(1924)	90
Maryland Medical College.....(1911)	85
Washington University School of Medicine.....(1922)	88
Columbia University College of Phys. and Surgs.....(1925)	88
Hahnemann Med. College and Hosp. of Philadelphia...(1924)	84, 86
Medical College of Virginia.....(1925)	79
82, 83, 84, 84, 84, 85, 85, 85, 85, 85, 85, 86, 86, 87, 87, 87, 87, 87.5, 88, 88, 88, 88.7, 89, 89, 90, 90, 90, 90.5, 91, 91, 91, 93, 93	
University of Virginia Department of Medicine.....(1921)	87
(1925) 79, 83, 83, 84.5, 85, 85, 85, 85, 85, 86, 86, 86, 86, 86.4, 86.5, 87, 87, 87, 88, 88, 88, 88, 89, 89, 90, 90, 91	
University of Toronto Faculty of Medicine.....(1918)	86
Osteopaths	84, 85

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University School of Medicine		(1923)	Dist. Colum.
Atlanta Medical College		(1914)	Georgia
Emory University School of Medicine		(1922)	Georgia
Loyola University School of Medicine		(1916)	W. Virginia
Northwestern Univ. Woman's Med. School, Chicago		(1891)	Illinois
University of Louisville School of Medicine		(1912)	N. Carolina
(1924) Kentucky			
Johns Hopkins University Medical Dept.		(1915), (1924)	Maryland
University of Maryland School of Medicine		(1913)	N. Carolina
(1923) Maryland			
University of Michigan Medical School		(1924)	New York
Bellevue Hospital Medical College		(1891)	Dist. Colum.
Department of Medicine University of Pennsylvania		(1901)	Virginia
Jefferson Medical College of Philadelphia		(1923)	W. Virginia
University of Nashville Medical Department		(1909)	California
University of Tennessee College of Medicine		(1924)	Tennessee
Osteopath			New Jersey

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Indiana University School of Medicine		(1917)	U. S. Navy
University of Louisville School of Medicine		(1924)	U. S. Navy
Jefferson Medical College of Philadelphia		(1924)	U. S. Navy
University of Pennsylvania School of Medicine		(1917)	U. S. Navy

Book Notices

THE HEALING GODS OF ANCIENT CIVILIZATIONS. By Walter Addison Jayne, M.D. Cloth. Price, $5. Pp. 569, with 7 illustrations. New Haven: Yale University Press, 1925.

This is the second work made possible by the publication fund established in memory of Philip Hamilton McMillan, Yale '94. The author, emeritus professor of gynecology and abdominal surgery in the University of Colorado, writes that his study was made in odd moments purloined from a life of active practice. The work is scholarly, thorough, and based on extensive research among English, French and German writers. Not by its style, but by its subject matter, the introduction recalls the "Dionysus" of Pater. It is an excellent essay, an invaluable part of the book, and gives unity to the mass of details that follow. Herein is traced the mode of development of religions, the religious psychology of ancient peoples, and the relation of religion to disease; for example:

> It is a matter of common knowledge that from the dawn of history the healing art has been more or less intimately connected with religion. . . . On the free soil of Hellas, however, . . . developed, under hippocratic influence, a scientific spirit, ethical ideals, and a definite line of cleavage. . . .
>
> Mankind instinctively is dependent upon the Supreme Power for life and all benefits, and it is not a matter for surprise that many in our communities, rejecting modern professional ideas of disease, its causes and its treatment, prefer to rely, as did the people of old, upon divinity for the preservation of health and for relief from all physical ills. The prevalence of this faith, side by side with "new thought" and the many variant forms of mental healing resulting from modern psychological studies, excites a very special interest in the types of belief of those ancient peoples who exercised the religious healing function. . . .
>
> In most countries herein referred to there were physicians who practiced independently, side by side with temple-healing. Some were governed by custom, others by law. It is assumed that, for the most part, they gathered their medical knowledge from folk-lore and experience or from the priestly class; and it is known that they frequently cooperated with the priests, to whom they looked for guidance. Such independent work undoubtedly had a very definite influence on the development of the various ancient theories of disease and on the more material, practical therapeutics, fostering scientific methods and a gradual relaxation of the hold of religion on the healing art; but for these coincident phases in the history of medicine the reader is referred to the many general treatises on the subject.

The structure of the book is simple and orderly. Eight chapters take up, respectively, the healing gods of the Egyptians, Babylonians and Assyrians, pagan Semites of the West, Indians, Iranians, Greeks, Romans and Celts. In turn, each chapter is divided into two parts: first, a general survey of civilization, religion and medicine, and, second, an alphabetical "who's who" of the healing deities. A voluminous bibliography and a well made index close the book. The work should appeal to a wide range of readers. Physicians interested in the cultural aspects of medicine, archeologists, students of religion, paleographers, historians and those whose fields lie in the ancient classics of Eastern and Western civilizations will derive pleasure and information from Dr. Jayne's conscientious study.

LABORATORY MANUAL IN GENERAL AND PATHOGENIC BACTERIOLOGY AND IMMUNITY. By Veranus Alva Moore, M.D., V.M.D., Professor of Comparative Pathology, Bacteriology and Meat Inspection, New York State Veterinary College at Cornell University, and William Arthur Hagan, M.S., D.V.M., Professor of Bacteriology and Parasitology, New York State Veterinary College at Cornell University. Cloth. Price, $2. Pp. 252, with 39 illustrations. Boston: Ginn and Company, 1925.

This manual has been compiled primarily for the use of veterinary students but contains a sufficient amount of material for general courses offered in most colleges. It is a rewritten edition of Moore's manual, first published nearly twenty years ago. There are thirty-three exercises in general bacteriology and thirty-two in pathogenic bacteriology and immunity. The work for each exercise is stated definitely and is followed by detailed descriptions of the procedures. In many exercises much more material is given than the student is expected to cover, thus making the book generally useful as a complete laboratory working manual and more flexible to the ideas of different teachers. The methods are accurately described and down to date. This is one of the best laboratory books for teaching purposes that has appeared.

PSYCHOGENESE UND PSYCHOTHERAPIE KÖRPERLICHER SYMPTOME. Von R. Allers, J. Bauer, L. Braun, R. Heyer, Th. Hoepfner, A. Mayer, C. Pototzky, P. Schilder, O. Schwarz, J. Strandberg. Herausgegeben von O. Schwarz, Privatdozent an der Universität Wien. Paper. Price, 27 marks. Pp. 481, with 10 illustrations. Vienna: Julius Springer, 1925.

This is a combination of medical philosophy and psychology. An extensive general introduction, the philosophical portion, discusses the problem of the human organism; the body-soul concept from the standpoint of philosophy and natural science; individual make-up as a basis of nervous disorders, and concepts and methods of interpretation. This is rather long and, though interesting to the general reader, offers little of practical use to the physician. The real interest to medical men begins in the second part, written by specialists. Thus, Hoepfner writes on psychogenic speech disorders; Braun, on psychogenic disorders of the heart, on cardiac asthma and on functional disturbances of respiration; Heyer, on psychogenic disorders of the gastro-intestinal tract; Strandberg, on the psyche and dermatology. Schwarz describes faults of psychogenic micturition; Mayer, psychogenic gynecology; Schwarz, psychogenic disorders of the male urinary organs, and Pototzky, psychogenesis and psychotherapy of organ symptoms in children. The third part of the book is devoted to a summary of psychotherapy. The book treats of a theme rarely encountered in medical literature. The tendency is from the purely materialistic to the spiritual, from the intellectual to the emotional. The same tendency is beginning to change medical thought. Following the materialistic conception in medicine, after which the human body was considered only as an appropriate subject for the laboratory, there has come a reaction in favor of psychologic thinking and treatment. Though a knowledge of somatic medicine in all its details is essential for a correct diagnosis, the treatment of the patient must make use of psychologic means. Few physicians will dispute the fact that the psyche and human personality, normal and abnormal, must be studied psychologically, but many fail to realize that this applies also to symptoms that are caused by organic disease. We are bound to admit that there exists a psychogenesis of bodily symptoms. Indeed, the authors of this book believe that the recognition of this fact constitutes the most concrete and far-reaching advance in practical medicine; more than that, they consider this the basic foundation of the scientific medicine of today. The editor has set his co-workers the task of gathering information regarding our

knowledge of the psychogenic influences on organic functions. Not only have they succeeded in giving a good account of the phenomena themselves, but they have also indicated the methods to be employed in treating the patient as well as his disease. This work has greatly deepened our knowledge of the psychic concomitants of organic disorders, for the authors have made profound studies and have furnished convincing proof for their statements. They are of the opinion that a reawakening of therapeutic optimism has occurred in modern medicine and that the therapeutic nihilism of old has seen its day. It is quite significant of the modern trend that most of the contributors to this work are from Vienna, the former hotbed of therapeutic nihilism and at present the great center for all sorts of therapeutic experiments. The last part of the book deals in an excellent manner with current psychotherapeutic systems, especially that of Adler and Freud, though Dubois' persuasion method and suggestion by hypnosis are given due credit.

INJURIES OF THE WRIST. A Radiological Study. By Dr. Étienne Destot. Translated by F. R. B. Atkinson, M.D., C.M. Cloth. Price, 18 shillings net. Pp. 176, with 87 illustrations. London: Ernst Benn Limited, 1925.

This is a radiologic study of injuries of the wrist. Destot began his work in preparation for the volume in 1897, and did not finish it until 1918, shortly before his death. It is a monograph in the highest sense of the word, describing the results of his researches and his experiences. His deductions are based on a wealth of clinical material probably unequaled in the experience of any other observer. It includes more than 150 personal cases of fractures of the scaphoid; twenty-four cases of fractures of the semilunar, a much rarer lesion; four cases of fracture of the os magnum; six cases of fracture of the cuneiform, and four cases of fracture of the trapezium. The author points out that fractures of the latter three bones are of only slight importance, because of their rarity, and that one of his objects is to show what a strong physiologic connection binds fractures of the radius to these different carpal bones, and why and how the scaphoid and the semilunar bear the brunt of the injuries. Between sprain, dislocation of the scaphoid and of the semilunar, dislocation of the carpus, fractures of the scaphoid alone, or those associated with fractures of the radius and of the semilunar, there is only a difference of degree and of anatomic variation; the latter depends on the points of application of the force, according to the different position in falling. The author takes issue with M. Delbet's theory, which denies the possibility of reduction of the semilunar. Indeed, Destot reports that all the cases under his care since 1898 were reduced even at the end of twenty-five days, and in one case after three and one-half months. Independent of the scientific interest in this question, there is the possibility of rapidly bringing back to the injured person the use of the hand, which, if left to itself, or operated on later, often remains greatly incapacitated.

The author explains at great length that "in the wrist the scapholunary system is an intermediate joint which doubles the amplitude of the movements of the hand, adding to the displacements of the radiocarpal and midcarpal joints and transmitting to the second row the shocks it receives from the forearm. The scaphoid and the semilunar are wedged between the malleus of the forearm and the incus of the second row united to the metacarpus, and according to the numerous positions on falling, the amount of violence, and numbers of different conditions, will show special lesions." The best proof that can be given of the importance of the scaphoid and of the semilunar is the frequency of their lesions. The author points out that if one will take a thousand cases of injury to the wrist—fractures of the radius, lesions of the carpus or mixed lesions—he will always find that the scaphoid and semilunar play a part. The author attributes so much value to the scapholunary system that he speaks of dislocation of the carpus in order to show that the different luxation of the scaphoid and of the semilunar encountered in the majority of the plates of so-called dorsal luxation of the os magnum is the dominating factor, as he demonstrated by his pathologic study dating back to 1898. He insists that when one speaks, for example, of isolated fractures of the semilunar, one ought to add "with subluxation or fracture of the scaphoid, or even fracture of the radius." In explanation, he states that "the carpal condyle cannot be flattened or diminished in height in the region of the semilunar without bringing in its train a diminution in the height of the column of the scaphoid; and the latter must dislocate, break or become impacted in the radius to compensate for crushing of the semilunar in the same way as, when the scaphoid is crushed, the semilunar must be dislocated or broken." Sometimes the semilunar, sometimes the scaphoid lesion, is primary. But whatever may be the method of action of the force, the lesions of the two bones are inseparable.

The study includes the anatomy and the physiology of the wrist; sprains and subluxation of the scaphoid and of the semilunar; fractures of the scaphoid; dislocation of the carpus and midcarpal luxation; fractures of the semilunar; rare fractures of the other bones; radiocarpal luxation, and the different forms of fractures of the lower extremity of the radius. The work is richly illustrated with roentgenograms and diagrammatic line drawings. There is a full bibliography, which has been revised and edited by the translator. This work is an ideal contribution to surgical literature.

CANCER. Post-Graduate Lectures, Delivered under the Auspices of the Fellowship of Medicine. Edited by Herbert J. Paterson, with a preface by Sir John Bland-Sutton, LL.D., F.R.C.S., President of the Royal College of Surgeons. Cloth. Price, $4. Pp. 186, with illustrations. New York: William Wood & Co., 1925.

A monograph on cancer embodying no fundamentally new facts concerning the disease may seem to many an unnecessary encumbering of the literature. The intensive study of the subject by so many workers the world over will some day doubtless lead to the discovery of the cause of the disease or its successful treatment. This volume fulfils the need for a brief clinical monograph on the most important forms of cancer. It consists of a series of lectures edited by Paterson. The medical aspects and pathology of the disease are considered in the first two chapters; then follow chapters on cancer of the larynx, esophagus, breast, stomach, uterus, kidney, bladder and rectum. The text is interestingly and concisely written. Brief as it is, it presents in adequate detail the pathology, diagnosis and treatment of the forms of cancer outlined.

LE SINUS SPHÉNOÏDAL. Anatomie—Exploration chirurgie. Par Georges Canuyt, Professeur de clinique oto-rhino-laryngologique à la Faculté de médecine de Strasbourg, et Jean Terracol, Chef de clinique oto-rhino-laryngologique à la Faculté de médecine de Strasbourg. Paper. Price, 25 francs. Pp. 278, with 134 illustrations. Paris: Masson et Cie, 1925.

This extensive monograph on the sphenoid sinus contains a discussion of the embryology and anatomy of that nasal accessory sinus and of the ethmoidal cells. The authors, in contrast to the habits of many European writers, refer often in detail to many English and American authorities. Emphasis is given the optic canal and the optic nerve in the relations of the latter to the sphenoid sinus and posterior ethmoidal cells. There are numerous drawings and diagrams in the book, among which are those illustrating the various relations of the hypophysis, of the optic nerve, and of other cranial nerves. Then follows a discussion of the ethmoidal mucosa, together with methods of examination of the nose and nasal accessory sinuses. Considerable space is devoted to the radiography of the head and nasal sinuses, including the use of buccal films. The operative procedures are thoroughly discussed, the two principal routes, by way of the nasal septum and by way of the turbinates and posterior ethmoidal cells, being completely described. The authors believe that the route by way of the turbinate and posterior ethmoids is the more complete operation, especially if the ethmoids are involved. If, on the other hand, there is no disease of the ethmoidal cells, the septal route is probably the better. At the end of the book is an extensive bibliography, which the two authors in their modesty think is rather incomplete, but its perusal leads one to the opposite view. Altogether this seems an excellent book, written with the usual French clarity and at the same time with that attention to details which is usually found most often in German works.

Medicolegal

Testimony of Experts—Belief in Spiritualism

(Franzman's Executor v. Nalty et al. (Ky.), 271 S. W. R. 1034)

The Court of Appeals of Kentucky, in reversing a judgment which was rendered in favor of the contestants of a will, says that, although the testimony of nonexpert witnesses will not be entitled to probative effect beyond that justified by the facts to which they depose concerning the acts, conduct and conversation of a testatrix, a different rule obtains with respect to the testimony of physicians and alienists who are classed as experts. The professional opinion of physicians and alienists concerning the mental condition of a testatrix, even though based on facts and circumstances which may not in the opinion of a layman, even a court, induce the belief and opinion expressed by the experts, are competent, and make mental capacity a question for the jury. There was perhaps something more than a scintilla of evidence in this case tending to show that the testatrix was without mental capacity to make a will at the time she attempted to do so, but this could not be based on the fact that she believed in spiritualism, for this court has expressly held that such belief is not evidence of mental incapacity.

Lack of Pregnancy in Rape Case

(People v. Whitmore (Mich.), 203 N. W. R. 87)

The Supreme Court of Michigan, in affirming a conviction of the defendant for statutory rape, says that he requested the trial judge to instruct the jury that lack of pregnancy could be considered on the issue of whether there was sexual intercourse. This was refused. Counsel contended that, as pregnancy may be shown, the converse ought to be true. No authority was cited. Pregnancy speaks of sexual intercourse, but lack of pregnancy does not speak either way on the subject. It was at the most a subject for argument. There was no error in refusing the instruction.

Liability of Sanatorium for Death of Escaped Patient

(Arlington Heights Sanatorium v. Deaderick et al. (Texas), 272 S. W. R. 497)

The Court of Civil Appeals of Texas, in affirming a judgment of $5,000 damages against the defendant sanatorium for the death of one Deaderick, says that the latter had become so nervous and his mind so disturbed from the effects of influenza that his wife had placed him in charge of the sanatorium, from which he escaped early one morning, at a time when he was walking about the building without restraint and without any one to watch over him and to prevent him from leaving; about twelve hours later his dismembered body was found on a railroad track. The superintendent of the sanatorium knew that the patient was shrewd and cunning and might escape and hurt himself. The room in which he was confined had no lock and could not be well fastened. No one was watching him when he left the building. The jury was justified in finding that the defendant was negligent in permitting his escape, and in not discovering and returning him to the sanatorium before he was killed on the railroad track. The negligence in permitting his escape was the proximate cause of his death. If he had not been permitted to escape, he could not have gone to the railroad yards, and if he had not gone there he would not have been killed.

When a patient suffering with mental trouble is placed in a sanatorium, it is the duty of the officers and employees to use ordinary care in watching, caring for and treating him, and such duty is not performed if the patient is negligently permitted to escape, and the guilty party will be liable for all damages proximately arising from such negligence. That was the case made by the pleadings. If, as contended by the defendant, no liability would arise for injury to the patient wandering about the city, through the negligence of the defendant, no liability could attach for an escape no matter how negligent the institution might be. The negligence in permitting this patient to leave the sanatorium was a distinct wrong, and the defendant was liable for all injurious consequences resulting from such wrong. The petition stated a good cause of action against the defendant, and a general demurrer was properly overruled.

There was no testimony tending to show that the railroad company was guilty of any negligence in killing Mr. Deaderick, but if there had been, and the intervention of that cause did not break the natural sequence of events, the injury would be referred back to the wrongful act in permitting a demented man to leave the sanatorium. If it was negligent and wrongful for the defendant to allow this patient to leave the sanatorium and he came to his death while at large, through an act wrongful or not wrongful, the blame and liability for the death would make its way back to the wrongful escape as the proximate cause of the death.

If Mrs. Deaderick refused to allow her husband to be placed on the second floor of the sanatorium and thereby contributed to his escape, such action on her part would not be a defense to the negligence of the defendant in permitting the patient in broad daylight to walk off from the hospital and then in using no adequate means to recapture him. If they knew in the sanatorium that he had suicidal tendencies or a desire to escape and still accepted him, it was their duty to guard against his propensities and desires.

Contract for Service Is One for Continuous Service

(Lackey Mining Co. v. Chandler (Ky.), 272 S. W. R. 391)

The Court of Appeals of Kentucky says that plaintiff Chandler, a physician, owned a tract of coal land and leased the property to two men who assigned the lease to the defendant mining company. The lease contained a provision that during the operation of the lease the plaintiff should at his option have the privilege of serving as physician for the said mining operation, and should be paid therefor by the lessees or their assigns $50 a month. The plaintiff exercised his option to serve as physician of the mining operation, and continued to act as such for over a year. He then moved to a place a hundred miles away, with no intention of returning. He remained at that place for something over a year, and then moved back near to the mine, and asserted his right to act as physician for the mining operation under the contract. About twenty-one months later, he sued the company and recovered a judgment for $1,050, which the court of appeals reverses, remanding the cause for a new trial. After he had moved away, the company had arranged with another physician to do the practice, making his charges against the miners and filing his accounts with the company, the money being taken out of the wages of the miners and paid to him. When the plaintiff returned, the company was willing for him to do the work in that way; but he insisted on his right under his contract, and that was denied by the company.

The contract was a personal one. The plaintiff could not assign his contract to the other physician and put him in as his substitute, when he moved away, and the company had the right to make the new arrangement with the other physician. The plaintiff did not go to the other place temporarily, but to make it his home, and with no intention of returning. The contract provided that he should at his option during the operation of the lease have the privilege of serving as physician for the mining operation. When he exercised his option he became the physician for the mining operation during the operation of the lease. The legal effect then was the same as if the contract had provided that during the operation of the lease he would serve as physician for the mining operation. But such a contract is a contract for continuous service. The plaintiff was bound to fill his part of it with ordinary skill and diligence. He could not act as the physician for a year and then move a hundred miles away with no intention to return; and at the end of a year, finding it not as profitable at the new place as he expected, he could not return and demand the carrying out of a contract which he had abandoned by moving a hundred miles away, with no intention to return.

A contract for service is a contract for continuous service. When the party employed does not serve continuously but

abandons the contract and voluntarily moves away, with no intention to return, he thus puts an end to the contract; and it is not in his power to revive the contract at a subsequent time when it may be to his interest to carry out the contract. Were the rule otherwise, he could quit any day and begin any day, as often as he pleased. The law allows no such liberty to either party in a contract of this kind. On the admitted facts, the circuit court should have instructed the jury peremptorily to find for the defendant company.

Testimony Regarding Capacity to Transact Business

(Stewart et al. v. Miller et al. (Texas), 271 S. W. R. 311)

The Court of Civil Appeals of Texas says that the testimony of a physician that, in his opinion, a Mrs. Miller, who was a grantor in certain deeds, had sufficient mental capacity to transact any business that might be fully explained to her, was, over objection, admitted in evidence. This testimony involved the opinion of the witness as to Mrs. Miller's legal capacity to transact business, in addition to and as distinguished from her mental capacity to understand the nature and effect of her act in transacting such business, and should have been excluded. Again, the witness was permitted, over objection, to testify that Mrs. Miller, in his opinion, had sufficient mental capacity to understand the nature and effect of her action in transacting a business matter, if it was fully explained to her. This testimony involved an opinion of the witness as to the mental condition of Mrs. Miller, with reference to her capacity to understand business affairs. It involved a question of fact only and was properly admitted.

Society Proceedings

COMING MEETINGS

American College of Physicians, Detroit, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.
American Congress on Internal Medicine, Detroit-Ann Arbor, Feb. 22-29. Dr. Frank Smithies, 920 N. Michigan Ave., Chicago, Secretary.
Isthmian Canal Zone, Medical Association of, Ancon, Jan. 19. Dr. David L. Robeson, Ancon Hospital, Ancon, Secretary.
Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19-20. Dr. R. F. Bellaire, Trimble Block, Sioux City, Secretary.

CONFERENCE ON PERIODIC HEALTH EXAMINATIONS OF APPARENTLY HEALTHY PERSONS

Held at Headquarters of the American Medical Association, Chicago, Nov. 20, 1925

DR. ALLEN H. BUNCE in the Chair

Purpose of Conference

DR. J. M. DODSON, Chicago: A resolution passed by the House of Delegates at Atlantic City directed the executive secretary of the Bureau of Health and Public Instruction to arrange for this conference. The original resolution in reference to these periodic health examinations, passed in St. Louis, called on the county medical societies to take up this matter. A large proportion of the county medical societies have done nothing to stir up interest. Until they do, it is not likely to make much progress. The secretaries of the state medical societies are the agents to whom the profession must look to stir up the county units to activity. It is hoped that out of this conference will come a new and more effective impetus for the movement. There are many things that need to be done, especially in arranging for the education and arousing of the interest of physicians.

The Middle Aged Man

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: I have endeavored to make periodic health examinations the key-note of the administration of the office to which I have been elevated. We have curtailed the infections to a large extent, and have increased longevity up to the average age of 55 by stamping out diseases and by improving infant welfare. What have we done for the middle aged man with the degenerative type of disease? We cannot reach him until he wants to come to us. At present he comes only when he is sick, when he is obliged to come. He wants to be examined, but we have denied him this boon. The most deadly blow that the organized medical profession can give to every type of irregularity is to examine patients so carefully that they will recognize the difference between this method and that of the man who seems to think that all he has to do is touch a vertebra and it will do the rest. If we can work out practical methods whereby all men, women and children in this country may know of the supreme benefits that will come to them from a thorough annual audit of their physical condition and an intelligent interpretation of the findings, we shall have accomplished much. Let me express the hope that every man of us will go back to his constituent medical society so imbued with the importance and magnitude of this idea that he will sell it to his medical society. If it is properly presented and properly executed, I think it will be the most far reaching and stupendous step that has been taken by forward looking American medicine in this century.

EDUCATING THE PHYSICIAN ALREADY IN PRACTICE

Papers and Discussions, with Demonstrations by Examinations of Physicians Themselves

DR. ALEC N. THOMSON, Brooklyn: In December, 1922, the subject of health examinations was first discussed by our public health committee. In April, 1923, preliminary open discussion was started before the society by devoting the monthly meeting to the subject. During 1924, the special emphasis began. In March, the first leaflet was sent to all physicians and the examinations of our members began. In March also a Friday clinical lecture was given, with a demonstration of the technical procedure. In April, the stated meeting of the society was devoted to health valuation in relation to philanthropy, to business, to industry, to the church, to the profession—in short, to the community. In May, examination blanks were sent to all physicians in the borough by the Brooklyn health examination committee, and in June a letter and reprint on the types of physical examinations. In July, the report of findings was issued, and in September it was published in two medical journals. In September also a leaflet on the relationship of gonorrhea and syphilis to the periodic medical examination was sent to all physicians. In November, a leaflet was distributed reminding the profession that cancer control was predicated on the "health examination idea." During 1925, less intensive work has been done. The subject has not been allowed to lapse, however. The public health committee has been postponing the publication of its report until the A. M. A. Manual was off the press and in the hands of the society membership. This is now an accomplished fact.

The cost to the society has not been much actually, although a great deal in time and effort on the part of many individual members. In dollars, the whole affair has cost thousands. These in large part have been contributed by agencies interested in the community's health—willingly and without restriction—on a basis of joint participation in the field of community health, which is a much saner procedure than the usual cooperative affair wherein the medical profession "endorses" the activity of some program by signing on the dotted line following the words "approved by."

The next steps are the immediate publication of the committee report; the circulation in December of a leaflet on social hygiene, so called, in relation to health examination service; the publication of leaflets on tuberculosis and heart disease from the periodic medical examination point of view; and the continuation of the same idea if and when funds permit in relation to many subjects included in the field of preclinical medicine, such as diabetes, nephritis, blood pressure, temperature, overweight, underweight, child health and the like; in short, a "by mail" program designed to stimulate continuous medical training, using the health examination idea as the peg on which to hang modern medicine for the medical man in actual practice.

Postgraduate Courses

DR. ORRIN SAGE WIGHTMAN, New York: I am not going to talk on the title which has been assigned to me. I believe we are here to standardize our results, to exchange experience and to tell the way in which we have arrived at our conclusions. I stand now and always for the family practitioner. He has the confidence of his people; they will come to him. If he says a thing is good, they will believe it; if he says a thing is wrong, they will not believe in it. New York claims no leadership. We are trying to work our problem out from a little different angle and are going to give you the results. We thought that if we got physicians interested we would be doing something. We had seventeen lectures at the Academy of Medicine, and the attendance varied from 125 to 300 men. The men remember that periodic health examinations demand concentrated interest on the part of the general practitioner.

We felt that unless the thing was standardized in some way or another, we should all be going off on a tangent. We got out a questionnaire card. It is nothing but a memory chart so that when the examiner has finished, he will have covered the subjects. Then we correlated it with a little filing card. There is another factor: When a man is examined, he wants to know what it is all about. So we got up a certificate and the patient goes out with a tangible something. A lot of this preparation, as Dr. Dodson said, should be started in our medical schools. It was suggested that when physicians do their work better, there will be less need of public activity. If we are not living up to our obligations as county physicians, we would be glad to do better work, but we are not employed by any civic body to work for nothing. In New York County we are conducting a clinic, making periodic health examinations on people properly referred by charitable organizations. The patients are going to find out that we are not upholding public medicine, but are teaching the private physician to do private work better and are bringing private patients to him in a regular, legitimate way. It has gone very well so far.

Relative to the cost of these things, I can only tell what is working out in New York County. What is applicable to other places can be taken in whole or in part. We had no money to work with. We had to go to the foundations, and my hardest job has been to tell the foundations that they can help the medical profession 100 per cent if they will teach people to take this work to the family practitioner, and not try to exploit them in their public clinics. There can be no competition between city authorities and the family practitioner in his work.

Any work, to be effective, has got to meet the needs of the community. The main thing, after all, is that the men in our profession must be properly equipped, must conform to definite standards and must satisfy the person they are examining that he is being carefully looked over.

Typical Cases and End-Results of Periodic Health Examinations

ANNA M. RICHARDSON, New York: [A report of five cases illustrating the problems that the physician and the health client face in this type of medical service.]

DISCUSSION

DR. HAVEN EMERSON, New York: At the College of Physicians and Surgeons in New York, every student has a physical examination every year as a matter of routine. We have found cases of diabetes, early tuberculosis, errors of weight in ratio to the height and age, functional disturbances of the bowel, serious error of the eyes, and disturbances of hearing. I found myself asking and answering some of the following questions: Why do people ask for health examinations? Because of satisfactory service. Why do we ask questions dealing with the satisfaction of a person in his work and social relationships? Satisfaction in one's work or in one's social relationships is a functional measurement of the health of the individual and should be taken into account. What are the causes of success in managing this group of patients? Application of physiologic principles to the conduct of life, rather than the institution of medicinal or surgical therapy. It is exactly as necessary to be precise in one's physiologic hygienic advice as it is in the use of drugs. Why do we fail in periodic health examinations? Because of lack of conviction of the value of our own advice, our tendency to seek for a pathologic lesion instead of an error in the manner of life; because of our readiness to accept the patient's diagnosis and explanation of symptoms instead of measuring our findings against our own knowledge of the laws of physiology; because of our lack of imagination and resourcefulness in seeing the significance of minor deviations and developing simple devices for correction, and finally because of the lack of a thorough medical examination. Why is the training in this practice a broadening one to the physician? Chiefly because it shows the physician's dependence on the associated nonmedical services of the community. The only real distinction of scientific medicine as compared with many of the cults is that it has trained people to be capable of making a diagnosis between health and disease. The physician who cannot detect important diseases before those diseases have caused pain and interference with happiness or work is not fully skilled and trained.

These examinations are not exclusively for adults. If one is beginning at the beginning of life, one is dealing with the prenatal care of the expectant mother. On not less than four occasions during the period between the fifth month and the time of pregnancy, that woman should confront a physician or be reported to a physician by a competent observer. During the first two years of a child's life, not less than twelve examinations are required. Between the ages of 2 and 5, not less than once every six months that child should have a careful medical examination. From the age of 6 to the age of 25, there should be an examination once a year. If by the age of 25 the person is normally developed, he can be examined once every two years with safety, unless he is engaged in some hazardous trade. Between 45 and 65, he should be examined once a year, with this proviso: If he is out of proportion in weight or has an abnormal increase of blood pressure, or sugar or albumin in the urine, the examination should be made once every six months. That is absolutely essential. After the age of 65, he should be examined once every six months whether or not those conditions prevail. Up to the age of 65, that gives seventy-two occasions on which a human being needs to be advised by a physician. That is what good medical practice is doing now. The people of the United States are now prepared to ask for a good deal more than the medical profession is prepared to give.

DR. ORLANDO H. PETTY, Philadelphia: The first and most difficult thing to me is the education of the family physician. Too many family physicians think that all they need is a few of those lists, as the previous speaker referred to as being outlined in Dr. Emerson's summary, and feel that they can go ahead and make an accurate examination. I doubt whether 90 per cent of all the graduate or undergraduate family physicians whom I know are at all qualified to make a physical examination such as has been outlined. Until we demonstrate to them how to make a real physical examination, and then how to give hygienic advice, people will not go to them for periodic health examinations.

DR. ELLIOTT B. EDIE, Uniontown, Pa.: I want to stand right back of Dr. Petty. The general practitioner needs help if he is going to do these examinations efficiently. In my own experience, the most important thing has been to find focal infection early. The most striking things I have seen have been sinus defects that gave no evidence in the way of pain, discharge or anything else. The physician is not qualified to give advice as to the things that are recorded on the history blank. If the patient is overweight, the physician is not qualified to give a reducing regimen; he is not capable of prescribing exercise. In the future, the general practitioner is going to make health examinations and be the constant health adviser, not of his patient, but of his client.

DR. HENRY O. REIK, Atlantic City, N. J.: I said this morning that I was carrying on an educational program in New Jersey by broadcasting to the public advice to have these periodic health examinations made. We were getting a good deal of newspaper and other publicity. That part of

the story is working out very satisfactorily. I said also that I was visiting the county societies and talking to the family physician from the medical aspect of this question. There I am not meeting with quite so much success. I fear that too large a percentage of the general practitioners are not today prepared to carry on this work. I realize perhaps my inability to put the story over in just the right way and to make them take it up and act on it. The general practitioner needs postgraduate instruction, if not in how to use instruments, he needs instruction in the technic of carrying out these examinations; he needs instruction as to the necessity for doing it and the necessity for making his examinations thorough and complete. I don't think it is so much inability to do it as it has been disinclination, perhaps a little bit of laziness. We have got to do a great deal of campaigning to start him up.

DR. J. M. DODSON, Chicago: We are all agreed that the family physicians are the crux of the situation. In the cities it is not very difficult to get them together for instruction or to find the proper men to do it, but we have a large proportion of the medical men situated in the remoter parts, who are eager for this kind of instruction. Where are they going to get it? First, in places where the state medical association is organizing postgraduate medical courses, as they are in Michigan, that offers a solution. Second, the state university in most of the Middle Western states has a first-class medical school. The faculty of that medical school should be doing extension work. Where that is not possible, every hospital with an organized staff ought to regard itself as a continuation study and teaching center for the doctors of medicine in that vicinity. Finally, where that is not possible, a much less satisfactory solution would be that some member of the particular society who is seeking information and instruction should be selected to resort to a graduate school or the university school or some hospital, and then return to give instruction to his fellows. When we have taken the instruction to the men who have to do the work in the field, we shall have made a great step.

DR. E. C. HAMMOND, Philadelphia: I was impressed in 1895 to see Dr. Haynes, a general surgeon, take out an ophthalmoscope and examine the patient's eyes. After we were in the elevator going to the operating room, I mentioned the fact. He said, "Doctor, every physician should be able to use every instrument of precision to make a diagnosis." The second point is in making a periodic health examination of women: shall one make a pelvic examination as a routine? Any woman having symptoms referable to the pelvis certainly should be examined. Supposing, in the routine examination, that she has no symptoms referable to the pelvis, should one suggest a pelvic examination? Frequently there are anatomic defects which are results of childbirth, not yet symptomatic, but subsequently are very apt to become so that can be anticipated by the examination. We feel that the carcinoma will be picked up more frequently and a great deal of good will be done by a routine pelvic examination if the woman will submit to it.

DR. ALEC N. THOMSON, Brooklyn: We in Kings County have been conducting a great deal of our stuff by mail. We have taken away the alibi of the medical men in the entire borough, 2,600 of them; they can no longer say they never heard of a health examination. New York County has done a similar type of work to ours, but it has done it with lecture and demonstration, not on the medical men as we did it, which has contributed much to Kings County. The one outstanding feature perhaps of our work in Kings County is our general graduate education. Men began asking for more pediatrics. We are selling, if one chooses to use the term, courses throughout the state of New York in pediatrics and obstetrics very largely on the basis of a clinical opportunity to see demonstrated the use of examination instruments and to observe the methods of procedure.

DR. ORRIN SAGE WIGHTMAN, New York: Not possession of the list but a knowledge of what was contained in the list would make a very good foundation for any man to work on. I am assuming that any normal physician can do this. I think they are a pretty intelligent group. I have a high regard for the country physician, and he has taught me a lot. There are some little trimmings that might come in the list that I am assuming a man doesn't use, but the average man does use them. Go to a country physician's office and see how nicely his place is fitted up. He has got to tell the patient what is the matter with him, and he can't refer him to a specialist at a stone's throw. There are two things in the list the average man might not ordinarily use, an ophthalmoscope and possibly a tuning fork. It is oversight in the use that is lacking. Haven Emerson gives us the ideal. It is my inspiration. I don't want a lot of his charts; I can't get them filled out. In his statistical records they are absolutely invaluable. If I give you mine and it is only one-quarter as good, next year we will get 50 per cent, and by and by we shall have 100 per cent. About the education of the physician, again I uphold him. Dr. Reik says we are not all prepared; maybe not, but I have learned much from people who came to me who didn't know anything.

DR. ANNA M. RICHARDSON, New York: We examine vaginally any woman who has had children and also the women who are over 40, unless they very much object and there are no symptoms. In the young girls with symptoms, dysmenorrhea cases, we make a rectal examination usually. If we feel it is a case that is going to need treatment and the physician himself is not interested in treating gynecologic conditions, he will not make the examination at the time of the general health examination but will refer the patient directly for treatment and save her the experience of examination one time. We have information also in relation to the tests which are valuable. We find there is a good deal of discussion about the Wassermann test. It depends on the group one is handling. Our group of examinees were from the national health organizations, also the Y. W. C. A. secretaries, and we have not made a routine Wassermann test there. The ten cases that were referred were negative.

Education of the Laity by Newspapers, Magazine Articles and Circulars

DR. ELLIOTT B. EDIE, Uniontown, Pa.: The literature of health examinations designed for the laity in the past has been lacking in distinction. Humanity desires security. Our publicity literature should promise men that periodic examinations will prolong their work period until they have made provision for old age. Mothers should be told that they may thus be kept in health until their children are launched in life. This is the security they want. We should assure apparently healthy persons that they are healthy and that the purpose of the examination is to keep them in that state. The head of an industry will feel more secure if shown that periodic examinations mean less time lost from sickness in his plant and more working years for trained men.

Our educational material must be diversified so that it will reach all sorts and conditions of men. A vital requisite to the success of any publicity is repetition. A campaign of long duration must be planned and carried through without interruption. It must always be kept in mind that instruction addressed to people *en masse* is attended with danger of incorrect application. We know the impossibility of making general rules that will apply in all cases. The public must know that a strong central organization exists to help in the work of health preservation. The preparation of our profession for the work of health conservation can be done only by the organization of a national department of health in Chicago, our medical capital, or in Washington, where it will be a part of the national government. In my opinion, a well organized department of health in Chicago will be more efficient than a government agency because it will be entirely under control of medical men and will have the advantage of our present organization. Financing of this organization should present no great difficulties, as it will make the strongest possible appeal to men of affairs and to associations having an economic interest in health and longevity. We shall have the confidence of the people when we convince them that we are in earnest. We must form a modern, efficient, broad-gage organization.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

170: 625-780 (Nov.) 1925

Biliary Aspects of Liver Disease. P. Rous, New York.—p. 625.
*Rheumatic Fever. H. F. Swift, New York.—p. 631.
*Value of Calcium Chlorid as Diuretic: Influence on Circulatory Mechanism. H. N. Segall and P. D. White, Boston.—p. 647.
*Value of Venesection in Treatment of Decompensated Heart. B. Gordon, Boston.—p. 671.
*Microcytosis in Hemolytic Icterus. B. R. Whitcher, New York.—p. 678.
*Magnesium and Calcium Content of Blood and Blood Plasma of Tuberculous Patients. E. W. Schoenheit, Asheville, N. C.—p. 689.
Nontuberculous Pulmonary Fibroses. D. W. Atkinson, San Francisco. —p. 693.
Study of Four Hundred and Fifty Cases of Epidemic Encephalitis. J. B. Neal, H. W. Jackson and E. Appelbaum, New York.—p. 708.
*Rôle of Focal Infections in Etiology of Eczema. H. W. Visher, Waukesha, Wis.—p. 723.
*Effect Produced on Enzyme Concentration of Duodenum by Oral Administration of Certain Commercial Pancreatic Preparations. D. N. Silverman, W. Denis and S. Leche, New Orleans.—p. 727.
Simple Lactating Adenoma of Breast. A. E. Bothe, Philadelphia. —p. 731.
*Pharmacologic and Therapeutic Properties of Sulphocyanates. J. B. Nichols, Washington, D. C.—p. 735.
Abdominal Pain Due to Epigastric Hernia. J. W. Hinton, New York. —p. 748.

Rheumatic Fever.—Swift points out that three diseases causing great economic loss are tuberculosis, syphilis and rheumatic fever. Not only are the early acute stages of these maladies time consuming in a period of life when the victims are of greatest value to the community, but their late manifestations, a consequence of their inherent chronicity, cause many persons to be so severely crippled that they are often less efficient productive units. The clinical history and progress of rheumatic fever are discussed, and one point in particular is stressed in the treatment: the period of rest needed is longer than is usually recognized or enforced. The average period for seventy-two cases in the Rockefeller Hospital was about 100 days. The shortest period was fifty days and the longest 254 days. Swift says that if general hospitals kept their patients with rheumatic fever for periods similar to this there would be only rheumatic fever patients in the wards during the winter and spring months. The question to be met is: "How can these patients be given proper periods of rest?" In this one point of proper provision for rest cure, the institutional and sanatorium treatment of tuberculosis has pointed a way. Perhaps the time may come when the tuberculosis problem will have been solved completely and these sanatoriums will be converted into hospitals for the treatment of patients with rheumatic hearts; but it is to be hoped that before that time provision for the proper care of a large group of these patients will have been made. A few heart hospitals in which proper study of these problems could be both intensively and extensively carried out would do much toward formulating a definite plan in the treatment of a condition which up to the present has been permanently benefited but little by the methods now in vogue.

Calcium Chlorid as Diuretic.—In cases of cardiac failure with edema in which constant rest in bed, digitalization and the administration of various diuretics have not resulted in a satisfactory diuresis, Segal and White have found that calcium chlorid may be employed as a diuretic. No deleterious effects were observed from the oral administration of calcium chlorid, from 10 to 15 gm. daily, in any of the cases studied. Crystalline calcium chlorid was administered in the form of a solution almost invariably, in 2.5 gm. doses, diluted in from 50 to 100 c.c. of water. In experiments on a normal person, doses of 5 gm. and 8 gm. each were taken. In the majority of cases the daily amount consisted of 15 gm., given in 6 doses of 2.5 gm. each at two-hour intervals. With the smaller doses the only handicap was the unpleasant taste of the drug; this may be avoided by giving the dry salt in capsules, each containing 0.5 gm. The larger doses of 5 and 8 gm. caused a burning sensation in the epigastrium which was readily relieved by the patient taking some food and less readily by drinking water. Diarrhea did not occur in any case; rather was there a tendency to constipation.

Value of Venesection in Treatment of Decompensated Heart.—The roentgenographic examination of a series of decompensated hearts in patients with failing circulation showed a diminution in the size of the heart immediately after venesection. When this occurred, Gordon says, there was a corresponding improvement in the condition of the patient. It is suggested that the hearts in these cases are more efficient in a moderately dilated form than when extremely dilated. In those cases in which no changes in the heart size occurred, it is believed that the muscle tone was so unresponsive to venesection, because of certain anatomic changes in the myocardium, that no improvement occurred in the circulation. A survey of the hospital records shows that numerous patients, bled as an emergency measure after other procedures of therapy, such as drugs, had failed, possibly because of their delayed action, responded favorably to venesection. It seems, therefore, that venesection has a place in improving the action of the decompensated heart and temporarily at least in removing signs and symptoms of failure.

Microcytosis in Hemolytic Icterus.—Whitcher has been studying the blood conditions before and after splenectomy in cases of hemolytic icterus. Three of these cases occurred in the same family, the mother and two small boys being affected. There was a return to a more normal blood picture and a very distinct improvement in the corpuscles after the operation. Therefore, because of the disappearance of the microcytes after splenectomy, in contrast to their abundance in the blood in hemolytic icterus before the operation, this feature may be regarded as a concomitant manifestation of the anemia of the disease, rather than an inherent character of the erythrocytes of the individual.

Magnesium and Calcium in Blood of Tuberculous Patients.—In normal and tuberculous persons, a variation of the magnesium content of the blood plasma was found by Schoenheit between 0.018 to 0.026 mg. per cubic centimeter and 0.031 and 0.038 mg. in the whole blood. No connection with the pathologic condition or the age, stature and body weight was found. The calcium values in the blood plasma of normal persons, determined after ashing it, proved similar to the values found by others, using a similar method, but were found considerably less in the blood plasma of tuberculous patients.

Focal Infections Cause Eczema.—Five cases of eczema apparently caused by focal infection are reported by Visher. In three cases, recovery followed the removal of abscessed teeth. In the fourth patient, the eczema ran its course concurrently with an acute pharyngitis. In the fifth case, rapid subsidence of the eruption accompanied improvement of infected pelvic viscera. Careful search was made in each case for other possible causes of the skin lesions, but none were found. Local antipruritic treatment in four cases had no effect on the skin lesions, aside from decreasing the scratching, and improvement seemed to occur in spite of rather than because of it.

Pancreas Preparations Increase Digestive Power of Duodenal Enzymes.—The results presented by Silverman et al. are interpreted as furnishing experimental proof of the fact that pancreatic preparations taken by mouth increase the digestive power of the duodenal contents.

Pharmacology of Sulphocyanates.—The alkaline sulphocyanates are stable, distinctive and biologically active substances, entirely different in their pharmacologic properties from the deadly prussic acid and cyanid group. In sufficient amounts they exert potent and distinctive pharmacologic properties, acting especially as intense spinal irritants, with lethal termination. Upward of 15 gm. might cause death in man. For therapeutic use, sodium sulphocyanate, in doses of

up to 1 gm. daily (5 grains three times a day), Nichols says has been found markedly effective in reducing arterial hypertension.

American Journal of Physiology, Baltimore

74: 497-714 (Nov.) 1925

*Site of Formation of Bilirubin. F. C. Mann, C. Sheard, J. L. Bollman and E. J. Baldes, Rochester, Minn.—p. 497.

*Physiologic Action of Light. III. Depression of Arterial Blood Pressure. C. I. Reed, Chicago.—p. 511.

*Id. III. Effects on Arterial Blood Pressure of Direct Irradiation of Blood in Vivo. C. I. Reed, Chicago.—p. 518.

*Id. IV. Effects on Blood of Irradiation in Vivo. C. I. Reed, Chicago. —p. 525.

*Irradiation of Chicks with Cod Liver Oil. C. W. Carrick, Lafayette, Ind.—p. 534.

Ultrafiltration and Electrodialysis of Insulin Solutions. T. C. Taylor, C. E. Braun and E. L. Scott, New York.—p. 539.

Changes in Protoplasm of Nereis Eggs Induced by β-Radiation. A. Forbes and C. Thacher, Boston.—p. 567.

Presence of Insulin in Desiccated Beef Pancreas. V. Ross, Bloomfield, N. J.—p. 579.

*Regulation of Flow of Bile. G. E. Burget, Portland, Ore.—p. 583.

*Cause of Death from Anoxemia. A. E. Koehler, H. M. F. Behneman, O. E. Benell and A. S. Loevenhart, Madison, Wis.—p. 590.

*Physiology of Gastric Secretion. III. An Attempt to Prove That Humoral Mechanism is Concerned in Gastric Secretion by Blood Transfusion and Cross Circulation. A. C. Ivy, R. K. S. Lim and J. E. McCarthy, Chicago.—p. 616.

*Id. VIII. Proof of Humoral Mechanism. A. C. Ivy and J. I. Farrell, Chicago.—p. 639.

Effect of Auto Condensation and High Frequency Electric Current on Tonus of Skeletal Muscle. W. W. Tuttle and E. Williams, Urbana, Ill.—p. 650.

Study of Response to Continuous Intravenous Injection of Large Amounts of Glucose. J. D. Boyd, H. M. Hines and C. E. Leese, Iowa City.—p. 656.

*Distribution of Vitamin B in Maize Kernel. H. M. Croll and L. B. Mendel, New Haven, Conn.—p. 674.

Effect of Insulin on Morphologic Blood Picture; Relation of Diet to Convulsions Induced by Insulin. V. E. Levine and J. J. Kolars, Omaha.—p. 695.

Site of Formation of Bilirubin.—A comparison of the bilirubin content, as measured by the spectrophotometer, was made by Mann et al. of the arterial and venous blood of most of the large organs of the body and other isolated vascular areas. In most of the vascular areas, the bilirubin content of the venous blood was greater than that of the arterial blood of the spleen and bone marrow, which is said to prove that bilirubin is formed in the spleen and bone marrow.

Effect of Light on Arterial Blood Pressure.—Reed found that a beam of light of approximately 100 f. c. intensity, when directed into one or both eyes of a dog under ether anesthesia will cause a pronounced depression of arterial blood pressure. A beam of light from a carbon arc employed in the same manner and giving a total intensity of 1,250 f. c. will produce a more profound depression of blood pressure. More intense light does not produce a change of proportionate magnitude but induces the same degree of change somewhat more rapidly. This effect is not wholly due to nervous factors since bilateral vagisection and section of the optic nerve do not abolish or prevent the effect, although the latter operation does modify it considerably. No positive evidence was obtained that photochemical decomposition liberated any depressor substance into the blood stream. Short ultraviolet rays were not present in either of the two sources of light employed.

Effect of Irradiation of Blood on Blood Pressure.—Reed states that direct irradiation of blood circulating through a quartz tube interposed in an artery will cause a massive depression of general arterial blood pressure. Animals sometimes die from the shock even when anesthesia has been discontinued. This result may be obtained in irradiation with a carbon arc rich in ultraviolet or with a spectrum from which infra red rays have been filtered (longer than 7,000 Angström units) or ultraviolet rays below 3,300 Angström units. The differences between results obtained with these three spectrums are not pronounced.

Effects of Irradiation on Blood.—A beam of light of approximately 4,000 f. c. intensity projected from the positive electrode of a carbon tungsten arc lamp operated on a 110 volt direct current circuit at 4 amperes and condensed through a quartz lens was directed by Reed on a quartz tube interposed in the carotid artery so that the blood flowing through the tube was irradiated directly. Minor changes in hemoglobin percentage and in erythrocyte count occurred in both irradiated and control dogs to about the same degree so that it is probable that the increase was due to concentration of the blood. There was an absolute leukopenia, a lymphopenia but a relative lymphocytosis. The changes were not due to the anesthetic or to shifting of leukocytes. All available evidence indicates that photodynamic effects are, biologically, stimulators of oxidation; and it is suggested that rays constitute one means of accelerating metabolism, which may, however, proceed to a degree of intensity that is destructive.

Irradiation with Cod Liver Oil.—Carrick was able to show experimentally that the antirachitic substance in cod liver oil can be transmitted externally to young chickens by means of irradiation with cod liver oil in pyrex flasks. The results obtained present further evidence that the antirachitic substance in cod liver oil is some form of ultraviolet energy.

Regulation of Flow of Bile.—Burget is of the opinion that the function of the sphincter of Oddi has been overemphasized and not enough attention has been given to the tonicity of the intestine in attempting to measure the resistance of this sphincter. His study favors the hypothesis that bile flow is regulated by intra-abdominal pressure and tonicity and peristalsis of the duodenum, rather than being dependent on a reciprocal activity between the gallbladder and the sphincter of Oddi.

Cause of Death from Anoxemia.—Koehler and his associates conclude that decreased oxidation induces a vicious circle in that it causes acidosis, and the acidosis further interferes with the power of the tissues to use oxygen. Death then occurs.

Humoral Mechanism in Gastric Secretion.—An attempt is made by Ivy, Lim and McCarthy to prove that a humoral mechanism is concerned in gastric secretion by blood transfusion and cross circulation.

Humoral Mechanism in Genesis of Gastric Secretion.—Ivy and Farrell present evidence obtained by use of a new procedure for the study of gastric physiology; namely, the subcutaneous transplantation of a gastric pouch. The transplanted pouch does not show appreciable fluctuations in the continuous secretion. This secretion never contains free acid and only a small amount of total acid. Such a pouch secretes a gastric juice containing acid after a meal and after histamin and gastrin administered subcutaneously. The evidence presented shows decisively that a humoral mechanism is one of the mechanisms concerned in the genesis of gastric secretion. The evidence does not prove or disprove a hormone hypothesis. Various possible factors that might be involved in the humoral mechanism of secretion of the pouch are mentioned and discussed.

Vitamin B in Maize Kernel.—The discovery that vitamin B is not confined to any one part of the wheat kernel, but is distributed throughout the entire grain, has called for comparative investigations of other cereals. An attempt was made by Croll and Mendel to determine the mode of distribution of vitamin B in the structural parts of the maize kernel. Methods were devised for separation of the maize kernel into its structural parts. Feeding experiments with portions of the yellow maize kernel showed that practically all of the vitamin B of the whole grain is found in the embryo. The endosperm contains practically no vitamin B, while the bran includes an extremely small amount, if any, of this factor.

Arkansas Medical Society Journal, Little Rock

22: 125-150 (Nov.) 1925

Use of Chlorin Gas in Treatment of Infections of Respiratory Tract. R. H. R. Mann, Texarkana.—p. 125.

Common Colds. T. Douglass, Ozark.—p. 129.

Intestinal Obstruction. A. B. Carney, Fort Smith.—p. 134.

Endocrinology, Los Angeles

9: 353-440 (Sept.-Oct.) 1925

*Precocious Menstruation: Two Cases of Pubertas Praecox. H. Wheelon, Seattle.—p. 353.
*Thyroid Studies. I. Distribution of Goiter Among Indians. H. P. Rush and L. T. Jones, Portland, Ore.—p. 372.
*Case of Tetania Parathyreopriva Treated with Collip's Parathyroid Extract. H. Lesser and H. C. Shepardson, San Francisco.—p. 383.
*Hypopituitarism and Diabetes. H. J. Johns, Cleveland.—p. 397.
*Studies on Vigor. VI. The Effect of Starvation on Spontaneous Activity of Castrated Rats. R. G. Hoskins, Columbus, Ohio.—p. 403.
*Effect of Epinephrin on Strips of Excised Pregnant Human Uterus. C. M. Gruber, St. Louis.—p. 407.
Oestrous Cycle in Rat. I. Effect of Thyroidectomy. M. O. Lee, Columbus, Ohio.—p. 410.

Precocious Menstruation.—In two cases of precocious menstruation presented by Wheelon, no definite causative factor for the appearance of the phenomenon was evident. Early menstruation (at 9 years), as evidenced by the second case presented, may occur independent of demonstrable gross pathologic change of the ovaries.

Goiter Incidence Among Indians.—Goiter is present among the Indians and the incidence of distribution is, according to Rush and Jones, for the most part, parallel to the distribution among the white population. The greatest exception is noticed in the Pacific Northwest, where the natural Indian diet contains more iodin (salmon) than does the white man's diet. Goiter is increasing among the Indians, and this increase seems to be explainable by two factors, iodin deficiency and toxic influences on the organism. These results seem to offer further support of the work by Marine and his co-workers and McClendon.

Tetania Parathyreopriva Treated with Parathyroid Extract.—The case reported by Lesser is said to be the first detailed record of tetany in a human being resulting from accidental parathyroid extirpation in which Collip's parathyroid extract was used. A woman, aged 30, was operated on for a large adenomatous goiter. The mass extended under the sternum and posteriorly behind the trachea. Three parathyroid glands were accidentally removed. The status of the fourth parathyroid gland is unknown. The patient promptly developed tetania parathyreopriva. Treatment consisted of the administration of Collip's parathyroid extract. No calcium was administered during the first three weeks, except for 1 gm. of calcium lactate, by mouth, prior to the beginning of parathyroid injections, and the patient was kept on a regular ward diet. The effect of the parathyroid extract on the subjective symptoms, objective findings and blood serum calcium was evidenced promptly. This new parathyroid hormone seems to be a true specific for parathyroid tetany.

Hypopituitarism and Diabetes.—Among the five cases reported by Johns, each of which showed clinical signs of hypopituitarism, one showed diabetes definitely, one a mild type of diabetes, and three patients were in a prediabetic state. There was decreased carbohydrate tolerance in all five of these cases in spite of the fact that, theoretically, because of the hypopituitarism, there should be an increased tolerance for carbohydrates. The observations reported confirm von Noorden's statement, but unfortunately give no information regarding the etiology of diabetes. Johns cannot but feel that the diabetes which is present in hypopituitary disorders is merely a coincidence—that the hypopituitarism has nothing whatever to do with it. These patients may be born with a hypo-insulogenic function; and thus if they happen to strain this weakened function by overeating, which seems to have happened in all these cases, for all showed marked obesity, there is nothing to stop them from breaking down completely the already impaired insulogenic function unless the danger is discovered early and the downward progress arrested. These cases are of interest, however, in that they serve to emphasize the danger of accepting any apparent physiologic rule as a final, all-inclusive dictum.

Effect of Starvation on Activity.—Ten castrated rats were subjected by Hoskins to four or six days' starvation. Their spontaneous activity as registered by the revolving cage method was augmented about 200 per cent. In four cases the increased activity persisted for several days after full feeding was resumed, whereas in three a depression, probably due to resulting physical debility, ensued.

Effect of Epinephrin on Uterus.—The effect of epinephrin was studied by Gruber on strips taken at the time of cesarean section from three pregnant human uteri. In each case the results confirm the findings of previous investigators in that it increased the tonus of the muscle.

Journal of Biological Chemistry, Baltimore

65: 555-818 (Oct.) 1925

*Sugar Content of Blood. B. K. Harned, Memphis, Tenn.—p. 555.
Method for Determination of Total Sulphates in Tissues. W. Denis and S. Leche, New Orleans.—p. 561.
Distribution of Injected Sulphates in Tissues. W. Denis and S. Leche, New Orleans.—p. 565.
*Is Antirachitic Factor of Cod Liver Oil, When Mixed with Ground Grains, Destroyed Through Storage? E. B. Hart, H. Steenbock and S. Lepkovsky, Madison, Wis.—p. 571.
Nutritional Requirement of Chicken. V. Influence of Ultraviolet Light on Production, Hatchability and Fertility of Egg. E. B. Hart, H. Steenbock, S. Lepkovsky, S. W. F. Kletzien, J. G. Halpin and O. N. Johnson, Madison, Wis.—p. 579.
Acid and Base Forming Elements in Foods. G. W. Clark, Berkeley, Calif.—p. 597.
Chemical Properties of Insulin. D. A. Scott, Toronto, Canada.—p. 603.
*Urea Test of Renal Efficiency. I. M. Rabinowitch, Montreal, Canada. —p. 617.
*Isolation from Blood of Hitherto Unknown Substance: Bearing on Present Methods for Estimation of Uric Acid. G. Hunter and B. A. Eagles, Toronto, Canada.—p. 623.
Influence of Sunlight on Bone Development in Swine. L. A. Maynard, S. A. Goldberg and R. C. Miller, Ithaca, N. Y.—p. 643.
Nitrogenous Constituents of Juice of Alfalfa Plant. H. B. Vickery, New Haven, Conn.—p. 657.
Energy Expenditure of Women During Horizontal Walking at Different Speeds. H. M. Smith and D. B. Dcolittle, Cambridge, Mass.—p. 665.
Colorimetric P_H Test of Water or Unbuffered Solutions. H. T. Stern, Bloomfield, Conn.—p. 677.
Mucoproteins of Snails Helix Aspersa and Helix Pomatia. P. A. Levene, New York.—p. 683.
Gas and Electrolyte Equilibria in Blood. VIII. Distribution of Hydrogen, Chlorid and Bicarbonate Ions in Oxygenated and Reduced Blood. D. D. Van Slyke, A. B. Hastings, C. D. Murray and J. Sendroy, Jr., New York.—p. 701.
Influence of Protein Concentration on Conductivity of Human Serum. D. W. Atchley and E. G. Nichols, New York.—p. 729.
Micro Method for Determination of Base in Blood and Serum; Other Biological Materials. W. C. Stadie and E. C. Ross, Philadelphia. —p. 735.
*Changes in Composition of Urine After Muscular Exercise. D. W. Wilson, W. L. Long, H. C. Thompson and S. Thurlow, Philadelphia. —p. 755.
*Excretion of Lactic Acid in Urine After Muscular Exercise. S. H. Liljestrand and D. W. Wilson, Philadelphia.—p. 773.
*Influence of Orally Administered Calcium Salts on Serum Calcium of Normal and Thyreoparathyreoprivic Dogs. A. M. Hjort, Detroit. —p. 783.

Sugar Content of Blood.—The Folin-Wu reactions for blood sugar have been applied by Harned to blood filtrates from mercuric nitrate precipitation. Such filtrates contain nitrogen only in the form of nitrate, and are thus free of many, if not all, of the interfering, nonsugar blood components. The Folin-Wu values for blood sugar average from 17 to 25 per cent. higher than those found by the modified procedure. The results are in accord with those given by the new Benedict method for blood sugar.

Antirachitic Power of Cod Liver Oil.—Hart and his associates assert that cod liver oil mixed with ground grains and stored in cans at room temperature retained its calcifying power for at least six months.

Urea Test of Renal Efficiency.—When urea was administered by mouth to normal individuals, previously restricted from fluids for at least twelve hours, and tests showing polyuric responses, above the rate equal to the minimum value of the "augmentation limit" (2.5 liters per twenty-four hours), were discarded, Rabinowitch says that the coefficient of variation in the case of the factor was practically identical with that of the constant. Under the same set of conditions a parallelism was noted also between the values of the factor and constant in forty cases of albuminuria. Since urine volume output is essential in calculating the constant and is not taken into consideration in the calculation of the factor, and in view of the foregoing observations, its effect on urea excretion is practically negligible under the set of conditions described. Excretory ability of the kidneys thus appears to

be the predominant factor influencing the value of the ratio U/B. The ratio has, therefore, a sound basis as a test of renal efficiency.

Pyrimidin Nucleosid Isolated from Blood.—A new substance of the empiric formula $C_4H_{11}N_2O_2$, believed to be a simple pyrimidin nucleosid, has been isolated by Hunter and Eagles from pig's blood, and evidence has been given of its presence in other animal bloods as well as in human blood. It is commonly present in human whole blood to the extent of from 10 to 12 mg. per hundred cubic centimeters, and, as it is confined entirely to the corpuscles, it is there in approximately twice these concentrations. The amount in blood varies over a wide range even in the same individual. The behavior of the new substance has been quantitatively studied with the old and new uric acid reagents, and the conclusion has been reached that the discrepancies between the direct method of Benedict and the precipitation method of Folin and Wu for the estimation of uric acid in human blood are due to the fact that this new substance adds to the values obtained for uric acid by the direct method. The substance is that mainly responsible for the direct "uric acid" values recently obtained in animal bloods by Bulmer, Eagles and Hunter, and is separable from uric acid in blood filtrates by the precipitation method of Folin and Wu.

Effect of Exercise on Composition of Urine.—The effect of short periods of strenuous exercise on the composition of the urine was studied by Wilson and his associates. There were observed, following exercise, a decrease in urine volume, and an increase in hydrogen ion concentration, and acid and ammonia excretion. The elimination of phosphates rose while that of chlorids fell. Each of these changes reached its maximum within from twenty to thirty minutes and was followed by normal values within from forty to ninety minutes after one or two minutes of exercise.

Effect of Exercise on Lactic Acid Excretion of Urine.—The excretion of lactic acid in urine after from two to three minutes of strenuous exercise was studied by Liljestrand and Wilson. The excretion reached maxima varying from 86 to 630 mg. during the second ten minute period after exercise. Thereafter, the elimination diminished and normal values were reached in from thirty to fifty minutes. The total quantity of lactic acid excreted after one period of exercise varied from 140 to 1,370 mg. A second period of exercise following shortly after the first yielded similar quantities. The lactic acid was shown to be the dextro form.

Effect of Ingested Calcium on Blood Calcium.—Hjort found that calcium salts, such as the lactate, chlorid and glycerophosphate, when administered orally in amounts containing a calcium equivalent of 0.2727 gm. of the oxid per kilogram of body weight, are absorbed rapidly enough to increase definitely the serum calcium level in dogs, whereas the relatively insoluble salts, such as the carbonate, in like quantity, are inconstant in this respect. Calcium salts, such as the lactate, when ingested in quantities with a calcium equivalent of less than 0.2727 gm. of the oxid per kilogram of body weight, simulate the less soluble salts in their effect on the serum calcium of dogs, for an increase is then inconstant. Calcium lactate is preferable to the chlorid, even though it must be given in greater bulk, for it is less irritating to the gastric mucosa. Calcium salts control tetany by increasing the blood calcium level of parathyreoprivic dogs.

Journal of Cancer Research, Lancaster, Pa.

9: 287-424 (Sept.) 1925

*No Immunity Produced by Inoculating Irradiated Tumor Tissue. F. C. Wood and R. E. Prigosen, New York.—p. 287.

*Biologic Resistance to Malignant Tumors. I. Determination of "Rad" Dose of Roentgen Ray for Sarcoma Cells (Crocker Rat Sarcoma No. 10) Exposed in Vitro. J. L. Weatherwax, E. T. Leddy and H. H. Morris, Philadelphia.—p. 298.

*Id. II. Effect of Roentgen Rays on Antigenic Specificity of Certain Proteins Exposed in Vitro. C. H. Ling, Philadelphia.—p. 305.

*Id. III. Effect of Single Injection of Irradiated Sarcoma Cells on Growth of Established Homologous Tumor Grafts. J. C. Small, M. J. Evans and E. B. Krumbhaar, Philadelphia.—p. 316.

*Id. IV. Effect of Multiple Injections of Irradiated Sarcoma Cells on Growth of Established Homologous Tumor Grafts. J. C. Small, M. J. Evans and E. B. Krumbhaar, Philadelphia.—p. 323.

*Leukemia, Pseudoleukemia and Related Conditions in Slye Stock of Mice. J. P. Simonds, Chicago.—p. 329.

Effect of Unfiltered Rays of Radium on Chick Embryo Heart Tissue Cultured in Vitro. H. B. Goodrich and J. A. Scott.—p. 374.

*Autoplastic Implantation of Tar Tumors as Compared to Their Histologic Pictures. L. Kreyberg, Bergen, Norway.—p. 381.

Sarcoma of Heart in Guinea-Pig. L. Bender, Iowa City.—p. 384.

Measurements of Electrical Capacity of Benign and Malignant Tumors—Clinical Significance. G. W. Crile, Cleveland.—p. 388.

*Relation of Pregnancy to Carcinoma of Uterus. W. A. O'Brien, Minneapolis.—p. 391.

*Ultraviolet Absorption Spectra of Blood Serums in Relation to Infectious Diseases and Cancer. W. Stenstrom and M. Reinhard, Buffalo.—p. 394.

*Lessons Learned from Failures in Roentgen-Ray Treatment of Cutaneous Cancer. H. H. Hazen, Washington, D. C.—p. 404.

*Insulin Content of Tumor Tissue. G. T. Cori, Buffalo.—p. 408.

*Probable Existence of Calendar Rhythm in Origin of Spontaneous Mammary Tumors in Mice. M. C. Marsh, Buffalo.—p. 411.

Relation of Certain Endocrines to Salt Content of Rat Blood. G. L. Rohdenburg and O. F. Krehbiel, New York.—p. 422.

Irradiated Tumor Tissue Not Immunity Producing.—Data, culled by Wood and Prigosen from about 6,000 experimental inoculations and more than 30,000 control stock inoculations, furnish considerable evidence against the assumptions that either immunity to inoculation, or resistance to a growing mouse or rat tumor, can be induced by the inoculation of irradiated tumor material. If no such immunity can be produced in animals, the authors state, the experimentation on human beings should be abandoned immediately as not only useless but also as dangerous and wholly unjustifiable from a scientific point of view.

Lethal Dose of Roentgen Ray for Rat Sarcoma.—A method for the determination of the lethal dose of roentgen-ray irradiation for the cells of rat sarcoma 10 (Crocker Institute) is described by Weatherwax, Leddy and Morris. It appears to be about 75 per cent. of the "Rad" dose described by Chambers, Scott and Russ for Jensen's rat sarcoma.

Antigenic Specificity of Proteins Not Affected by Irradiation.—The proteins, represented by *B. typhosus*, by horse serum and by sheep erythrocytes when exposed in vitro to large doses of unfiltered roentgen rays, Ling found, do not lose their antigenic specificity as tested by the production of immune serums in rabbits. Agglutinins, precipitins and hemolysins produced by irradiated antigens appear identical with those produced by the nonirradiated antigens in each instance.

Effect of Injection of Irradiated Sarcoma Cells on Tumor Growth.—The growth of established tumors (rat sarcoma 10) was not affected by a single injection of homologous tumor cells devitalized by roentgen-ray irradiation under the conditions of the experiments made by Small, Evans and Krumbhaar. They are convinced that the success of this method in other hands emphasizes the need for repeating the experiments with large numbers of animals and with other types of experimental tumors.

Id.—The growth of established tumor grafts of rat sarcoma 10 was not affected by three injections at weekly intervals of homologous tumor cells devitalized by roentgen-ray irradiation under the conditions of the authors' experiments. The hypothetic biphasic action of antigens of this type requires further investigation in that it might have a bearing on the interpretation of failure to establish some degree of immunity in animals following the injection of devitalized tumor cells.

Leukemia and Pseudoleukemia Among Mice.—Among the 316 mice in the first 15,000 necropsies of the Slye stock, studied by Simonds because they showed enlargements of the lymph glands and spleen, there were found sixty-seven leukemias, of which twenty-eight were of the lymphatic, and thirty-nine of the myelogenous type; 111 pseudoleukemias, and fifty-one lymphosarcomas. Borderline or transition cases are numerous. A generalized lymphosarcoma may closely resemble a pseudoleukemia; a subleukemic pseudoleukemia is not easily differentiated from a true leukemia; a leukosarcoma partakes of the characteristics of both leukemia and lymphosarcoma, in some cases of pseudoleukemia, the lesion in one lymph gland or one group of glands may be so extremely invasive as to resemble a lymphosarcoma. An attempt has been made to establish criteria whereby these difficult cases may be classified correctly. Lymphoid hyperplasia may be either local or generalized. This condition differs from the diseases mentioned above chiefly in the absence of the quality of inva-

siveness. Anatomically and histologically, leukemia, pseudoleukemia and lymphosarcoma in these mice have distinctive features which indicate that they are probably fundamentally of the same nature and probably belong among the true neoplasms.

Autoplastic Implantation of Tar Tumors.—Ten autoplastic inoculations made by Kreyberg of tumors of histologically innocent appearance were all negative. Two autoplastic inoculations of tumors of histologically dubious appearance were negative. Ten out of thirteen autoplastic inoculations of tumors histologically malignant were positive. In these experiments a complete parallelism was found between the growth of the autoplasts and the histologic structure. It has not been possible to find any difference between the biologic and the histologic qualities of tumors tested.

Relation of Pregnancy to Carcinoma of Uterus.—The relative proportion of women in the cancer age who have borne children was investigated by O'Brien. At the time of life in which carcinoma of the cervix uteri is most common, only 9.16 per cent. of women had not been married. One statistical study showed that, of the women in the second decade of married life, only 7.4 per cent. had never been pregnant. While no definite conclusions can be drawn from these statistics as to whether carcinoma of the cervix uteri is dependent on pregnancy, they indicate that among those who have reached the cancer age parous women greatly predominate.

Ultraviolet Absorption Spectrums of Cancer Blood.—Stenstrom and Reinhard assert that blood serum of animals and human beings shows absorption bands in the ultraviolet part of the spectrum. Blood serums from cancer patients were examined and showed a slight variation among themselves. However, no definite difference was discovered between normal persons and cancer patients. There was not a marked difference in the absorption spectra between serums taken before and immediately after roentgen-ray irradiation or between the absorption spectra taken before and after the serums had been irradiated in a test tube with a moderate dose of roentgen rays.

Roentgenotherapy of Skin Cancer.—Hazen is of the opinion that a consideration of the facts observed would seem to indicate that the usual doses of the roentgen rays do not directly kill the cancer cells, but stimulate certain defensive reactions in the tissue. One of the defensive mechanisms is a local reaction, but there is good reason to believe that there may likewise be some general process of immunity concerning whose nature we are still ignorant. From the practical standpoint, preoperative irradiation has a scientific basis. When cutaneous neoplasms are treated by either the roentgen rays or radium, care should be taken that there is a fairly wide margin of normal tissue exposed in order that the defensive reaction may be established. Cancer invading cartilage or scar tissue cannot be dealt with satisfactorily by irradiation.

Insulin Content of Tumor Tissue.—Extracts prepared by Cori from malignant and benign tumors, according to the method of Doisy, Somogyi and Shaffer, contained only traces of insulin.

Calendar Rhythm in Spontaneous Mammary Tumors of Mice.—Marsh found that data based on 159 tumor mice furnish strong evidence that spontaneous mammary tumors of mice reach the earliest palpable size more often in some calendar months than in others.

Journal of Urology, Baltimore

14: 429-569 (Nov.) 1925

*Comparative Study of Value of Stained Smears and Cultures in Diagnosis of Gonorrheal Vulvovaginitis. S. A. Scudder, Boston.—p. 429.
Destructive Lesions of Female Urethra in Childhood: Differential Diagnosis from Female Hypospadias. A. B. Cecil, Los Angeles.—p. 441.
*Application of Creatinin Kidney Function Test. N. F. Ockerblad, Kansas City, Kan.—p. 477.
Difficulty in Distinguishing Between Radiographic Appearance of Urinary Stones and Calcified Abdominal Glands. A. L. Chute, Boston.—p. 489.
*Bilateral Renal Lithiasis. G. J. Thomas, Minneapolis.—p. 501.
Management of Bladder Tumors, Particularly the Inoperable Type. E. C. Watson, Buffalo.—p. 509.
Radium and Roentgen Ray in Treatment of Sarcoma of Prostate. H. C. Bumpus, Jr., Rochester, Minn.—p. 519.
*Sodium Thiosulphate in Mercuric Chlorid Poisoning. E. Hess and A. F. Massaro, Erie, Pa.—p. 539.
Suprapubic Drainage Preliminary to Punch Operation in Selected Cases. H. G. Bugbee, New York.—p. 549.
Cases of Retention of Urine Due to Posterior Urethral Valve and Cyst of Prostate. E. L. Keyes, New York.—p. 553.
Anesthesia for Minor Urologic Operations. S. W. Moorhead, Philadelphia.—p. 557.

Diagnosis of Gonorrheal Vulvovaginitis.—The diagnosis in cases of vulvovaginitis, in Scudder's opinion, should depend on smears and cultures from the urethra, vulva, vaginal introitus, upper vagina and cervix. In thirty cases of gonorrheal vulvovaginitis, no gram-negative diplococcus was found that should be confused with the gonococcus, either morphologically or culturally. In eighteen negative cases, used as controls, no organism was found that could be classed as *Micrococcus catarrhalis*. The smear is still the most reliable criterion of gonorrheal infection, but cultural results will be consistently positive if the material is obtained during the acute stage of the disease.

Creatinin Kidney Function Test.—The fact that creatinin is an end-product of chemical processes in the body and suffers no further chemical reduction in the body, nor, as far as is known, is it stored up by any organ or tissue, but is normally separated from the blood stream and excreted by the kidney, Ockerblad asserts, makes it an ideal substance for use as a test of renal function. A persistent depressed curve is a warning that the kidney is damaged beyond recovery. With the aid of this test one can get information regarding the functional ability of the kidney when the phenolsulphonephthalein test is silent. As a test for use in urology when precise information is required in a short space of time, it is unexcelled.

Bilateral Renal Lithiasis.—Thomas asserts that in infants and children 6 per cent. of renal stones are bilateral. In adults, 12 per cent. of renal stones are bilateral. Bilateral renal stones are multiple in 66 per cent. of cases. Large stones may be present in both kidney pelves without producing symptoms. Renal stones which may be silent in one or both kidneys should be thought of in all infants or children who have pus in the urine. A complete urologic study should be made of infants and children having pus in the urine. This must include a roentgenogram of the entire urinary tract. Bilateral renal stones, when multiple or when large, rarely indicate operation unless an emergency exists. Multiple recurrence is the rule.

Sodium Thiosulphate in Mercuric Chlorid Poisoning.—Hess and Massaro have been able to take a rabbit and give it a lethal dose of mercuric chlorid and then administer sodium thiosulphate, a gram per kilogram of body weight, and save the rabbit's life. Attention is called to the fact that, even with mercuric chlorid and sodium thiosulphate for two doses, the blood urea increases very rapidly and then gradually diminishes to normal.

Philippine Islands Medical Association Journal, Manila

5: 289-318 (Oct.) 1925

*Splenectomy in Splenomegaly. P. Guazon.—p. 289.
Osteosarcoma of Tibia in Girl, Aged 13, with Probable Metastasis in Left Lung and Pleura. C. Reyes.—p. 293.
Common Ventricular Opening for Aorta and Pulmonary Artery. J. Z. S. Cruz.—p. 295.
Need for Accurate Morbidity and Mortality Statistics. R. G. Padua.—p. 301.

Splenectomy in Splenomegaly.—In Guazon's series of twenty-one cases, twelve patients recovered completely, one improved, and eight died. The cause of death in four of these cases can be ascribed directly to the operation, because of hemorrhage, but the other four patients would have been saved had not complications occurred several days after the operation. These patients were all very poor surgical subjects, on account of great impairment of health. Malarial infection seems to be an important factor in the causation of splenomegaly in the islands. In Guazon's series, fifteen patients gave the history of having suffered from malaria. In two cases the malarial parasites (tertian type) appeared in the peripheral blood after the removal of the spleen. According to the pathologic data, the presence of organic changes in the

liver, heart, lungs and kidneys resulted in death. Splenectomy in one case of myelogenous leukemia proved fatal. Guazon is convinced that in selected cases of splenomegaly there is no doubt that the operation will bring about improvement in the general condition of the patient.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

48: 279-448 (Sept.) 1925

*Hepatolenticular Degeneration. S. Barnes and E. W. Hurst.—p. 279
Central Tracts of Nervus Vestibularis. I. H. Jones and W. G. Spiller. —p. 334.
Relations of Corpus Striatum and Pallium in Varanus; Their Bearing on Birds, Mammals and Man. W. Herman.—p. 362.
Nerve-Endings in Panniculus Carnosus of Hedgehog; Sympathetic Innervation of Striated Muscle. H. S. D. Garven.—p. 350.

Hepatolenticular Degeneration.—Barnes and Hurst contend that Wilson's "progressive lenticular degeneration," Gowers' "tetanoid chorea," certain cases of "pseudosclerosis" and Thomalla's "torsion spasm" should be grouped together as forms of "hepato-lenticular degeneration." The nervous symptoms of this disease never occur until the liver has been grossly damaged. The hepatic cirrhosis seen at postmortem is an end-result of a series of attacks of acute hepatitis. The toxin causing the hepatitis is not manganese. It probably has a bacterial origin in the alimentary canal. The variation in clinical nervous symptoms depends partly on which regions of the lenticular nuclei are mainly damaged, and partly on the degree to which damage is done to other nervous structures.

Indian Medical Gazette, Calcutta

60: 455-506 (Oct.) 1925

Acute Inflammations of Prostate. H. Smith.—p. 455.
Asepsis. H. Halliday.—p. 455.
*Staphylococcal Kidney in Childhood. E. H. V. Hodge.—p. 459.
Transmission and Etiology of Dengue. A. C. Chandler.—p. 460.
Soil Acidity and Survival of Hookworm Larvae. A. C. Chandler.—p. 462.
Toxic Symptoms of Organic Arsenic. A. D. White and R. S. S. C. Dutt.—p. 464.
Stibosan (Von Heyden "471"). L. E. Napier.—p. 466.
Izal in Cholera. L. Ganguly.—p. 467.
Lichen Spinulous. G. Panja.—p. 467.
*Fungo-Spirochetal Affections of Respiratory Passages. S. N. Mathur and M. Zutschi.—p. 468.
Results of Autopsies Held at Calcutta Police Morgue During 1923-1924 in Cases of Sudden Death. C. A. Godson.—p. 469.
Case of Echis Carinatus Poisoning. F. Wall.—p. 470.
Fatal Case of Snake-Bite (Echis Carinatus) During Pregnancy. S. A. S. C. Singh.—p. 471.
Case of Cobra Bite Successfully Treated with Fitz-Simson's Polyvalent Antivenomous Serum. A. C. Shradwaja.—p. 472.
Effect of Insect Bite. P. S. Mills.—p. 473.
Case of Arsenical Intolerance. Y. S. Row.—p. 473.
Id. V. N. Deuskar.—p. 473.
Case of Ovariotomy. R. S. C. Nath.—p. 474.
Case of Generalized Blastomycosis. G. Panja.—p. 475.
Case of Melanoderma. G. Panja.—p. 476.
Fatal Case of Snake-Bite (Echis Carinatus). C. Singh.—p. 477.
Case of Volvulus of Heum. M. E. Tiru Chelvum.—p. 478.
Case of Nevus. D. M. Bhatavadekar.—p. 479.
Accidental "Marking-Nut" Dermatitis. R. W. Scanlan.—p. 480.

Treatment of Kidney Infections in Childhood.—Hodge suggests that the kidneys in acute exanthems should be treated with antiseptics in the hope that their involvement may be averted. The following mixture is recommended: hexamethylenamin, from 3 to 5 grains (0.2 to 0.3 gm.); acid sodium phosphate, from 3 to 5 grains; sodium benzoate, 3 grains; quinin dihydrochlorid, ½ grain (0.03 gm.); water, ½ ounce (15 c.c.). This mixture should be given four times a day, four hourly, and once in the night if the patient is awake.

Fungus in Sputum.—While examining sputum for tubercle bacilli, Mathur and Zutshi found forms closely resembling *Monilia tropicalis* of Castellani, together with spirochetes, pneumococci and *Micrococcus catarrhalis*. In a few samples there were staphylococci, streptococci but seldom fusiform bacilli.

Indian Medical Record, Calcutta

45: 305-336 (Oct.) 1925

Infection and Immunity. A. Roy.—p. 305.
Kala-Azar. P. N. Gupta.—p. 319.

Journal of Cancer, Dublin

2: 1-30 (Oct.) 1925

Cancer of Breast; Deep Roentgen-Ray Treatment. W. Pilger.—p. 1.
Deep Roentgen-Ray Therapy; Importance of After-Treatment. K. M. Hiranandani.—p. 10.
Etiology of Heterogenicity of Cancer Tissue. E. O. Houda.—p. 16.
Localization of Brain Tumors by Ventriculography. J. W. Pierson.—p. 22.

Journal of Laryngology and Otology, Edinburgh

40: 697-764 (Nov.) 1925

Methods of Caring for Diseases of Pharynx, Larynx and Mouth. C. H. Mayo.—p. 697.
Evolutionary Factors in Production of Pharyngeal Diverticula. V. E. Negus.—p. 702.
Intranasal Dacryocystostomy. J. S. Fraser.—p. 725.

Journal of Physiology, London

60: 347-478 (Oct. 31) 1925

*Tissue Oxygen-Tension; Tetany and Convulsions. J. A. Campbell.—p. 347.
Secretion of Sweat and Vasodilatation Produced by Pilocarpin. J. H. Burn.—p. 365.
Rôle of Phosphates in Carbohydrate Metabolism in Skeletal Muscle. F. Beattie and T. H. Milroy.—p. 379.
*Effect of Thyroid Feeding on Sugar Tolerance. H. P. Marks.—p. 402.
*Course of Blood of Renal Artery. J. N. Langley.—p. 411.
Circulation in Skeletal Muscle, Chiefly in Relation to Effect of Depressor Nerve of Rabbit. A. Jarisch.—p. 419.
Influence of Temperature on Equilibrium Between Oxygen and Hemoglobin of Various Forms of Life. I. Macela and A. Seliskar.—p. 428.
*Physiology of Spleen. J. Barcroft, H. A. Harris, D. Orahovats and R. Weiss.—p. 443.
Innervation of Smooth Muscle. III. Splanchnic Effects on Lower End of Esophagus and Stomach of Cat. H. O. Veach.—p. 457.

Oxygen Tension and Tetany.—It is suggested by Campbell that tetany and convulsions are caused by oxygen deficiency in the nerve cells (brain, spinal cord), and the purpose of tetany and convulsions is to counteract this defect. Injection of water intravenously causes a fall of oxygen tension in the tissues; addition of small quantities of salt to the water causes a definite rise in oxygen tension.

Effect of Thyroid Feeding on Sugar Tolerance.—A secondary hyperglycemia was observed by Marks following the injection of glucose or of a small dose of insulin into the thyroid fed rabbit whose liver still contains glycogen. When the liver is depleted of glycogen, a small dose of insulin or an injection of glucose produces a fatal hypoglycemia. The bearing of these observations on the mechanism of blood-sugar regulation is discussed.

Course of Blood in Renal Artery.—Langley's research shows that the renal artery supplies blood to the tissues of the hilum, the capsule and the surrounding fat, as originally described by Bowman. The supply to the capsule and the surrounding fat appears, however, to be partial and variable. The supply is by six or eight interlobular arteries which run through the cortex with little or no decrease in size. The renal artery also supplies blood to the ureter. The renal vein receives blood from the same areas.

Physiology of Spleen.—The view is put forward by Barcroft et al. that the spleen exercises a real function in adjusting the volume of circulating blood or, more correctly, circulating functional hemoglobin according to the needs of the animal.

Medical Journal of Australia, Sydney

2: 443-470 (Oct. 10) 1925

Plants, Including Fungi, Poisonous or Otherwise, Injurious to Man in Australia. J. B. Cleland.—p. 443.
Postoperative Psychosis. G. Brown.—p. 451.
Aspects of Use of Physical Agents in Treatment in Medical Practice. B. J. M. Harrison and F. J. Gwynne.—p. 453.
Sarcoma of Orbit: Krönlein's Operation; Report of Case. G. Brookes.—p. 456.
Acute Hemorrhage into Both Suprarenal Bodies; Case. J. S. Kessell. —p. 456.

Quarterly Journal of Medicine, London

19: 1-112 (Oct.) 1925

*Intestinal Diverticula. E. I. Spriggs and O. A. Marxer.—p. 1.
*Relative Prevalence of So-Called Endocarditis Lenta Before and After War. G. M. Wauchope.—p. 35.
*Clinical Syndrome of Thrombosis of Coronary Arteries. J. W. McNee —p. 44.
*Excretion of Chlorids by Healthy and Diseased Kidney. O. L. V. de Wesselow.—p. 53.
Action of Belladonna and Neutral Fats on Acidity of Stomach Contents. W. M. Roberts.—p. 74.
*Sulphemoglobinemia. L. P. Garrod.—p. 86.
*Clinical Aspect of Bundle Branch Block. J. Cowan and J. C. Bramwell —p. 95.

Intestinal Diverticula.—In 1,000 consecutive radiologic examinations of the alimentary canal, duodenal diverticula have been detected by Spriggs and Marxer thirty-eight times. In thirty-two cases the diverticulum was single; in six, two or more diverticula were present. One patient had six duodenal diverticula as well as several in the jejunum. In all, fifty-one duodenal pouches were recognized in the thirty-eight patients concerned, one arising from the first part of the duodenum, thirty from the second, sixteen from the third, and four from the fourth part. Diverticula of the jejunum were observed in seven patients. In four of these there were also pouches in the duodenum. In the ileum seven diverticula were found (excluding Meckel's diverticulum). Diverticulosis of the appendix occurred six times. Diverticulosis of the large intestine was recognized in 100 patients. A prediverticular state can be recognized radiologically, characterized by fixity of the affected part of the bowel wall, with small irregularities. This is the first stage of the disease, at which the minute hernias begin to develop. The second stage of diverticulosis is one of formed diverticula. The third stage is termed diverticulitis. Inflammation has now spread from the pouches to the walls of the bowel and surrounding parts. It is suggested that diverticulosis is the result of either a degenerative or an inflammatory process. Its association with spondylitis of the lumbar spine, which was found in 70 per cent. of the diverticulosis patients as compared with 20 per cent. in a control series, might favor either view; but the inflammatory appearances of the prediverticular state and the association, nearly as frequent as that of spondylitis, with abscesses at the apexes of the teeth, also with other septic conditions in various parts of the body, favor an infective origin. The demonstration of the prediverticular state particularly, which has been observed in thirty-five patients, makes it improbable that diverticulosis is due to mere passive extrusions in a weak but otherwise healthy intestine. An explanation is offered for the greater frequency of diverticulosis in the loop of the pelvic colon.

Incidence of Endocarditis Lenta.—The series of 195 cases reviewed by Wauchope supports the view already put forward and demonstrated by others that the disease known as endocarditis lenta became much more common after the recent war; that service in the army predisposed in some way to the acquirement of the disease, and that in ex-soldiers it tended to be more chronic in type than in civilians and women, in whom both the incidence and the form of the disease remained unaffected by the war.

Symptoms of Thrombosis of Coronary Arteries.—In sudden thrombosis of large branches of coronary arteries McNee says there may occur, in patients who survive the immediate shock, a very remarkable clinical syndrome. The main clinical features are as follows: (*a*) agonizing pain, of varying distribution, which lasts much longer than in the usual attack of angina pectoris; (*b*) dyspnea, which may be extreme; (*c*) a peculiar color and appearance of the face; (*d*) immediate signs of acute cardiac failure—cardiac, pulmonary, hepatic, and renal; (*e*) one sign which is inconstant, but almost pathognomonic in association with a suggestive history or group of symptoms, is a localized pericardial friction rub; (*f*) fever and polymorphonuclear leukocytosis; (*g*) various abnormalities in the electrocardiogram. A great many difficulties in diagnosis may arise if the pain is localized to the upper part of the abdomen, and an acute abdominal disease may wrongly be suspected. The course and prognosis of this serious cardiac disease is very variable. Many patients die at once or within a few weeks, but increasing experience in recognition of the condition has shown that some patients may survive in fair health for a number of years. The recognition of the clinical syndrome should be fairly easy in patients who have previously suffered from cardiac complaints such as angina pectoris. The real difficulties in diagnosis arise when the coronary occlusion is the first evidence of cardiac disease in a previously healthy patient.

Excretion of Chlorids by Kidney.—A method is described by de Wesselow by which the capacity of the kidney for chlorid concentrations may be examined, and which appears to give sufficiently constant results in the normal to be of value in clinical work. In interstitial azotemic nephritis the impairment of urea concentration and chlorid concentration run parallel. Nephritic patients showing edema appear to fall into two groups. In one of these groups, the plasma content in chlorid is low, while the edema fluid is rich in chlorids, and in these patients the edema is apparently of extrarenal origin. In the other group, the chlorid concentration is frequently good. It is suggested that in these patients defective water excretion is the underlying cause of the edema. It is doubtful whether true dissociation of the concentrating capacity of the kidney for urea and chlorid occurs. The causes of the variations met with in the percentage of chlorids present in the plasma of patients having interstitial nephritis are discussed.

Sulphemoglobinemia.—In two cases of sulphemoglobinemia reported by Garrod, the nitroso-bacillus was obtained in culture from the stools. Examination by the same technic of stools in other diseases failed to reveal the bacillus. The onset of this condition appears generally to be insidious but may occasionally be abrupt. The principal symptom in most patients was either shortness of breath (thirteen cases) or pain of an anginal nature (eight cases). Cardiac enlargement was well marked in fourteen cases. The superficial arteries were obviously diseased in five cases. There was definite hypertension in eleven cases and an associated valvular lesion in eleven cases. Auricular fibrillation was present in five cases, and complete auriculoventricular block in one case. The condition appears generally to be due to a secondary fibrosis of the heart muscle. If the lesion is localized, the prognosis is favorable, but if it is part of a widespread degenerative process the outlook is grave. The striking immunity of the left branch, which was involved in only one case in the series, is probably to be explained by its anatomic disposition and by its presence. Recovery in two instances took place during the administration in large doses of a vaccine prepared from the nitroso bacillus. After recovery no growth of the organism could be obtained from the stools, and substances immune to it were found in the blood serum of both patients.

After-History of Bundle Branch Block Cases.—Twenty-four cases, all of which presented a typical electrocardiogram of bundle branch block, have been studied by Cowan and Bramwell, and their after-histories followed up. Fourteen of the patients have died, ten within one year, and three others within eighteen months of coming under observation. Seven patients died of progressive heart failure with venous congestion, two of acute "heart attacks" and five from causes not directly connected with the heart. The remaining ten patients are alive at the present time. One has now been under observation for more than four years, and two for more than three years. Of these, seven are enjoying quite good health and are able to carry on a fairly active life. But in one only of these patients has there been any rich blood supply. The frequency of the condition has probably been underestimated, because of the fact that it can only be recognized by electrocardiographic methods. Its presence indicates a definite myocardial lesion, but if unaccompanied by signs of cardiac insufficiency is not necessarily of grave prognostic significance.

Tubercle, London

7: 57-104 (Nov.) 1925

Pulmonary Lesions Simulating Tuberculosis. S. R. Gloyne.—p. 57.
Results of Artificial Pneumothorax; Rôle of Other Operative Collapse Procedures in Treatment of Phthisis. R. C. Matson, R. W. Matson and M. Bisaillon.—p. 65.

Bulletin de l'Académie de Médecine, Paris

94: 961-1006 (Nov. 10) 1925

Prophylaxis of Leprosy in France and in Different Countries. Roux et al.—p. 963.
The Alien Sick in Paris Hospitals. P. Emile-Weil.—p. 991.
Attempts in the Middle Ages to Render the Malarial Regions Near Rome Habitable. A. Celli.—p. 997.
*Serotherapy in Mushroom Poisoning. Dujarric de la Rivière.—p. 1000.
*Induced Oleothorax and Pneumothorax. G. Kuss.—p. 1002.

Serotherapy Against Mushroom Poisoning.—Dujarric de la Rivière reports two cases of recovery from severe mushroom poisoning in which he used serum from a horse inoculated with the extract of *Amanita phalloides*. He suggests to inject 20 cc. of the "antiphallin serum" subcutaneously or, still better, intramuscularly.

Oleothorax.—Kuss' communication was summarized in the Paris Letter, Dec. 19, 1925, p. 1981.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 1419-1444 (Nov. 13) 1925

Myelemia and Malaria. H. G. S. Morin.—p. 1419.
Hypertrophic Pneumic Osteo-Arthropathy. A. Léri et al.—p. 1425.
*General Nutrition in Rickets. G. Variot and V. Nazarie.—p. 1433.
*Hemogenia-Hemophilia. P. Merklen and M. Wolf.—p. 1441.

Growth of Infants with Rickets.—Variot and Nazarie applied their pediometric method in 233 infants with different forms of rickets. They found the growth of the child affected less than is usually believed. The atrophic form of rickets, characterized by reduction of the weight and size, was manifest only in 36 per cent of the infants; 64 per cent were normal, or even above the medium size. The latter presented the hypertrophic form of rickets. Twenty-three of thirty-three with hypertrophic rickets started to walk at the usual time, and the cutting of the teeth was normal in thirty-two of thirty-seven. They admit that the rickets process may be provoked, among other factors, by bronchopneumonia, whooping cough and measles. Congenital syphilis was manifest in sixteen of their cases. Faulty feeding seemed to be more responsible for the disease than deficiency of sunlight.

Treatment of Hemogenia-Hemophilia.—Merklen and Wolf treated a case of hemogenia-hemophilia in a boy, aged over 5. Under three exposures of the spleen to the roentgen rays, supplemented by transfusion of blood, the bleeding time—which before had been twenty-two minutes—returned to normal. The coagulation time was only transiently reduced, and even then did not drop to less than an hour and forty minutes. Obviously the treatment acted only on one of the associated factors of the hemogenia-hemophilia.

Comptes Rendus de la Société de Biologie, Paris

93: 1057-1136 (Nov. 6) 1925. Partial Index

*Ion Balance of Plasma in Tar Cancer. A. Rémond et al.—p. 1061.
Action of Nerves on Cancer Growth. A. Rémond et al.—p. 1063.
Fate of Oil Injected Subcutaneously. L. Binet and P. Fleury.—p. 1076.
*Echinococcosis in a Long Bone. F. Dévé.—p. 1078.
*Bacteriophage in Collodion Sacs. C. Zoeller and Manoussakis.—p. 1091.
*Atropin and Peptone Shock. L. Garrelon and Santenoise.—p. 1096.
*Oncography of the Spleen. A. Tournade and M. Chabrol.—p. 1099.
Functional Adaptation of the Lungs. T. Vacek.—p. 1107.
Significance of the Botelho Reaction. G. Fichera.—p. 1116.
Action of Insulin on Tumor Grafts. N. Piccaluga and S. Cioffari.—p. 1118.
Action of Venoms on Striated Muscle. Houssay and Mazzocco.—p. 1120.
*Cancer of Common Bile Duct. D. Mosto.—p. 1122.
*Drugs and Epinephrin Secretion. Houssay and Molinelli.—p. 1124.
*Epinephrin Output in Asphyxia. Houssay and Molinelli.—p. 1126.
*The Syphilitic Chancre. J. J. Puente.—p. 1130.
*Fixation Abscess and Antitoxic Titer. Pico and Ferrari.—p. 1132.
Cancer Involving the Solar Plexus. J. W. Tobias and P. Bosq.—p. 1134.

Ion Balance of Plasma in Tar Cancer.—Rémond and his co-workers found a marked acidosis of the plasma of rabbits with a developed tar cancer. This was accompanied by an alkali reserve decline, thus presenting a decompensated acidosis. The fact appears to confirm Mendeleef's recent statement that acidosis is a necessary condition for proliferation of embryonal cells. The proportion of calcium ions, reduced during the growth of the cancer, notably increased in case of its regression, proving the inhibiting action of the calcium ion on the malignant process.

Experimental Echinococcosis in Tibia.—Dévé induced a typical hydatid cyst in the tibia of a rabbit, inoculating with material from a hydatid cyst in a sheep. He says that, as far as he knows, this is the first instance of experimental echinococcosis in a long bone.

The Bacteriophage in Collodion Sacs.—Zoeller and Manoussakis introduced a collodion sac with a culture of Shiga's bacillus into the peritoneal cavity of rabbits and guineâ-pigs, which had previously ingested the antidysenteric bacteriophage. When the sacs were removed the next day, the bacteriophage was found inside the sac, as also when sacs containing cultures refractory to the lytic action of the bacteriophage were placed in these animals. In all the tests the bacteriophage was inactive in the sac in the peritoneum of the animals. The bacteriophage did not display any lytic action, although this was manifest with the same bacilli in vitro. The bacilli became refractory to the lysis in animals vaccinated against dysentery, as well as in the controls. The facts seem to demonstrate the different activity of the bacteriophage in vitro and in vivo.

Atropin May Prevent Anaphylactic Shock.—Garrelon and Santenoise noted that injection of peptone does not induce an anaphylactic shock if it is preceded by an injection of atropin, an hour and a half before. No shock followed an injection of peptone administered an hour and a half after severing the vagus or the nerves passing to the thyroid. The effect of the atropin is apparently due to its paralyzing action on the secretory fibers of the vagus in the thyroid, arresting the passage of the sensitization-inducing hormone into the circulation.

Oncograph for the Spleen.—Tournade and Chabrol give the description of their apparatus which may be applied in less than five minutes (dogs). It exactly records the changes in the outline of the spleen, registering them on a revolving drum.

Primary Cancer of the Common Bile Duct.—In one of Mosto's two patients the tumor was located above Vater's ampulla; in the other in the duodenum, reaching the transverse fissure of the liver. Obstruction with dilatation of the bile ducts, cirrhosis, enlargement of the spleen and metastases existed in both cases.

Action of Different Substances on Epinephrin Secretion.—Experiments conducted by Houssay and Molinelli on sixty chloralosed dogs (in parabiosis) showed that nicotin, cytisin, lobelin, tetramethylammonium and methyl iodid of hordein notably increased the secretion of epinephrin by direct action on the suprarenal medulla.

Epinephrin Secretion in Asphyxia.—Houssay and Molinelli say that the exaggerated production of epinephrin during asphyxia is produced in dogs by anoxemia, and not by accumulation of carbon dioxid.

Histology of Chancre.—Puente reports that hyperplasia of the blood and lymph vessels as well as increase of the interstitial connective tissue are responsible for the hardness of the syphilitic chancre.

Increase of Antitoxic Titer by Fixation Abscess.—Pico and Ferrari succeeded in enhancing considerably the antitoxin titer of diphtheria antiserum by producing a fixation abscess in the horses. They injected 5 cc. of turpentine, four days before the inoculation.

Journal de Médecine de Lyon

6: 579-608 (Oct. 20) 1925

Associated Infections in Pulmonary Tuberculosis. P. Courmont and G. Boissel.—p. 579.
*Vaccine Therapy in Idem. P. Courmont et al.—p. 597.
*Pfeiffer's Bacillus in Tuberculosis. Courmont and Boissel.—p. 603.

Vaccine Treatment of Associated Infections in Pulmonary Tuberculosis.—Courmont, Blanc-Perducet and Boissel used an autogenous or stock vaccine in twelve patients. The vaccines were obtained from cultures of fresh sputum, and contained from 2 to 4 thousand millions of bacilli per cubic centimeter. A dose of 0.5 or 1 cc., then of 1 or 2 cc. was injected every second day. The series of ten injections was sometimes repeated twice. The injections were usually

well tolerated, and in certain cases were followed by transient improvement of the general condition, with reduction of sputum and bacilli. The treatment was without effect in 50 per cent of the cases. The streptococcus cases were most refractory.

Influenza Bacillus in Prognosis of Pulmonary Tuberculosis.—Courmont and Boissel found among fifty-four cases of associated infections the Pfeiffer bacillus in thirteen. This bacillus not only did not aggravate the tuberculous process, but appeared rather to promote fibroid changes and recovery. Thus the association of the Pfeiffer and tubercle bacilli in the sputum indicates a favorable prognosis in pulmonary tuberculosis.

Médecine, Paris

7: 5-80 (Oct.) 1925

Surgery in 1924 and 1925. P. Mathieu.—p. 5.
Postoperative Care in Gastric Surgery. R. Grégoire.—p. 23.
Unrecognized Pancreatitis. J. Okinczyc.—p. 26.
Use of Horse Serums in Therapeutics. L. Bazy.—p. 31.
Fractures of the Acetabulum. Rouvillois and Maisonnet.—p. 36.
Iodized Oil Test of Biliary Tract. G. Cotte.—p. 42.
Tumor of Breast in Children. A. Martin.—p. 44.
Separation of Pleura from Chest Wall in Treatment of Nontuberculous Suppuration of the Lung. F. Papin.—p. 49.
Little's Disease and Orthopedics. R. Ducroquet.—p. 53.
Scoliosis in Children. R. Massart.—p. 61.
Treatment of Influenza. L. Tanon and H. Cambessédès. Supplement.—pp. 1-48.

Journal des Praticiens, Paris

39: 689-704 (Oct. 24) 1925

Catheterization of the Ureter in Treatment of Nephritic Colic. Legueu.—p. 689.
Brow Presentation. Jeannin.—p. 691.
*Polyradiotherapy in Tuberculous Peritonitis. J. Saidman.—p. 693.

Polyradiotherapy of Tuberculous Peritonitis.—Saidman applied ultraviolet rays in treatment in thirty cases of tuberculous peritonitis. In favorable cases, even of generalized peritonitis, the ultraviolet rays alone brought about a general improvement. In resisting cases, roentgen and infra-red rays were used also. By associating the three kinds of rays, the results were better than with other methods. The ultraviolet rays act on the general condition and hasten absorption; the infra-red on the pains and superficial infiltrations, and the roentgen rays on the deep.

Paris Médical

57: 413-436 (Nov. 21) 1925

Medicosocial and Professional Questions. P. Cornet.—p. 413.
*The Physician in Vocational Guidance. P. Le Gendre.—p. 420.
Professional Secrecy and the Income Tax. A. Peytel.—p. 424.
Medical Consultation Before Marriage. A. Cayrel.—p. 428.
Organization of the Profession. M. Perrin.—p. 430.
French Law on Occupational Diseases. R. Pédelièvre.—p. 433.
Hygiene Taught by Example. L. Dufestel.—p. 435.

The Physician in Guidance of the Individual.—Le Gendre urges more active efforts to aid young and old, not only in choice of a trade, but in professional, social, technical, moral and regional orientation. The selection of a specialty is particularly important, and the professor may detect aptitudes or the reverse which the candidate himself may not suspect. He urges further collection of statistics showing the regional distribution of different classes of physicians and specialists. A map or other device showing these data should be available in every medical school each year.

Presse Médicale, Paris

33: 1521-1536 (Nov. 18) 1925

*Urine in Neuroses. Laignel-Lavastine and Cornelius.—p. 1521.
*Hydatid Pneumothorax and Pneumocyst. Bacaloglu and Tanasesco.—p. 1522.
Autoplastic Suture for Hernia. B. Goldenberg.—p. 1524.
*The Endocrine Glands During Starvation. G. Ichok.—p. 1525.

Urinary Phenomena in Mental Distress.—Laignel-Lavastine and Cornelius found hypo-acidity (preponderance of alkalions) in the urine of all patients with melancholia and other mental distress states. This was especially pronounced during paroxysmal exacerbations. There was evidence of an increased amount of organic acids. Under ammonium hydrochlorid and calcium chlorid, given in a daily dose of 4 gm., the paroxysms of the neurosis became rarer, and mild cases recovered completely. The authors comment on the analogy with tetany in young children, or essential epilepsy, in which irritability of the vagosympathetic system is provoked by alkalosis, or reduction of the ionized calcium in the blood. The results of their research seem to open a promising field for treatment of distress neuroses with drugs to restore the acid balance.

Hydatid Pneumothorax and Pneumocyst.—Bacaloglu and Tanasesco report that rupture of a hydatid cyst of the lung caused penetration of air into the pleura in one case, and only into the cyst in a second case. Both patients recovered after the cyst membrane had been totally removed. The clinical diagnosis was confirmed by roentgen-ray examination and a positive Casoni test in one case (intradermal injection of 0.5 c.c. of hydatid fluid provoking a red eruption, persisting for a few hours).

Action of Starvation on Endocrine Glands.—Ichok cites from Stefko's research in Russia during the famine, from 1922 to 1924. His study of the endocrine glands showed that the thyroid was reduced in size while the parathyroids were abnormally large, and the suprarenals degenerated. Starvation of the woman caused involution of the fetal thymus even during intra-uterine life. No traces of the gland were found in children about 6 years old. Low eosinophil count, with backward growth corresponded to changes of the pituitary gland. The pineal gland appeared diminished. Atrophy of ovarian follicles and seminiferous tubules were the main lesions of the genital glands.

33: 1537-1552 (Nov. 21) 1925

*Leukopedesis in Anaphylaxis. M. Loeper and G. Marchal.—p. 1537.
Anaphylaxis of Mental Origin. C. Pascal and M. J. Davesne.—p. 1539.
Extraction of Foreign Bodies and Endoscopy. J. Guisez.—p. 1541.

Significance of Leukopedesis in Alimentary Anaphylaxis.—Loeper and Marchal found reduced diapedesis of leukocytes in the stomach in their five cases of alimentary anaphylaxis. They tried to check the hypersensitization of the stomach by increasing its leukopedesis, regarding this as a defensive procedure. Good results were obtained with gradually increasing doses of peptone or pepsin, or both, before meals. The action of sugar proved to be even more constant. One dose of 10 or 20 Gm. of saccharose, given with the meal, provoked a considerable leukopedesis. A dose of 0.50 Gm. of antipyrin, usually causing an eruption in one patient, was tolerated well after the sugar, given in syrup form. In another case 0.001 Gm. of atropin was added to a fish dish which previously had caused urticaria. No such reaction occurred this time. Disappearance of the anaphylactic phenomena coincided always with an increase of leukopedesis. In cases of alimentary anaphylaxis, the gastric leukopedesis should be determined, thus enabling preventive and curative treatment of the pathologic phenomena.

Revue de Pathologie Comparée, etc., Paris

25: 981-1034 (Nov. 20) 1925

*The Syphilitic Family and the Cancer Family. Pfeiffer.—p. 981.
Nascent Iodin in Treatment of Nasal Fossae. Crouzel.—p. 1003.

Syphilitic Families and Cancer Families.—Pfeiffer has traced the pathologic history of sixty-one cancer families in the Dijon district, and states that he never encountered a cancer in a man or woman without antecedent or concomitant subjacent syphilis. One family tree shows five cancers in the seventeen descendants of a syphilitic grandmother, including four sets of twins. He cites five families from the literature showing coincidence of syphilis and cancer—a total of sixty-six instances. He recalls that syphilis develops without cancer and does not develop from cancer, and hence it must be the primary of the two. The assumption that it is the cause of cancer is sustained, he says, by malignancy developing in a syphilitic lesion, as in leukoplakia of the tongue, and by the tendency to retrogression displayed sometimes by a cancer under specific treatment of the patient's syphilis. He reports a case of this kind, the carcinoma in the tonsil disappearing under the specific treatment, but it returned several months later unmodified then by any medical measures.

Schweizerische medicinische Wochenschrift, Zurich

55: 1065-1084 (Nov. 19) 1925

*Alveolar Pyorrhea. O. Müller.—p. 1065. C'en.
Missed Abortion and Mole. C. Thelin.—p. 1070.
*Treatment of Gastric Hyposecretion. A. Jarotzky.—p. 1075.

Alveolar Pyorrhea.—Müller here concludes his study on the histology and diagnosis of alveolar pyorrhea. Twenty-four illustrations and an extensive survey of the literature are added.

Treatment of Gastric Hyposecretion.—Jarotzky administers from 80 to 150 cc. of a decinormal solution of hydrochloric acid, twice daily, to patients with hyposecretion. It acts excellently on the subjective symptoms, and also increases the secretion.

Pediatria, Naples

33: 1197-1252 (Nov. 15) 1925

Phototherapy of Rickets. U. Ferri.—p. 1197.
Progeria. Ivo Nasso.—p. 1213.
*Amboceptors in Scarlet Fever. S. De Villa.—p. 1225.
Kala-Azar in Children. F. Paradiso.—p. 1228.
Complications of Scarlet Fever Plus Diphtheria. M. B. Sindoni and F. Guccione.—p. 1237.

Amboceptors in Scarlet Fever.—Villa made complement fixation tests with the serum from late stages of scarlet fever. The reaction was always positive with extracts from scales from scarlet fever. It was positive in 70 per cent with the alcoholic extract of syphilitic liver; in 52 per cent with the alcoholic extract of guinea-pig heart, and in 47 per cent with an extract made from the scales from patients with desquamative erythroderma or sunburn. The liver extract gave positive reactions with 60 per cent of the serums from congenitally syphilitic children. The total number of serums tested is not mentioned. He believes that the reaction with extracts from scarlet fever scales is specific.

Policlinico, Rome

32: 1630-1664 (Nov. 23) 1925

*Bites of Asses. A. Sala.—p. 1637.

Bites of Asses.—Sala observed that when a person was bitten by an ass, the wound was exceptionally slow in healing. It takes months, especially with injury to the bones. The wound smells bad, and becomes necrotic, not producing good granulations. Irregular fever and chills, pains and impairment of the general condition are typical features. Chlorinated soda acts well locally. Injections of small doses of arsphenamin shorten the disease. He is making bacteriologic investigations on these wounds and on the mouth of asses.

Riforma Medica, Naples

41: 1009-1032 (Oct. 26) 1925

*Spirochetes in Multiple Sclerosis. P. Verga.—p. 1009.
The Adams-Stokes' Syndrome. P. B. Zanetti.—p. 1013.
The By-Effects of Arsphenamine. I. Iacono.—p. 1019.
Muscle Sign of Laryngeal Tuberculosis. E. di Lauro.—p. 1027.

Spirochetes in Multiple Sclerosis.—Verga examined the central nervous system in two cases of multiple sclerosis, using the Levaditi, Noguchi and Jahnel methods. The results were negative.

Arquivos do Inst. Bact. Camara Pestana, Lisbon

5: 257-361, 1924

Oligodynamic Action of Metals Applied in Sterilization of Water. C. Affonso.—p. 257.
*The d'Herelle Bacteriophagy Phenomenon. A. Saldanha.—p. 266.
Bacillemia in the Tuberculous. C. Mendes Dordio.—p. 327.

Bacteriophagy.—Saldanha reports extensive research on the d'Herelle phenomenon, the results of which have convinced him that none of the three theories advanced to date to explain bacteriophagy can be accepted. Is it conceivable, he asks, that an ultramicrobe can be insensible to the most potent antiseptics, or that a ferment is capable of multiplying itself. If the lytic agent were something secreted by the bacteria themselves, it would appear earlier and be more profuse when the bacteria are numerous; but the bacteriophage multiplies much more rapidly in emulsions with scanty bacteria.

Prensa Médica Argentina, Buenos Aires

12: 461-496 (Oct. 10) 1925

Pelvic or Pararectal Echinococcosis. G. Zorraquín.—p. 468.
*Chronic Eczema. M. R. Castex and A. F. Camauer.—p. 470.
*Tolerance for Metal Scrap in Eye. Adrogué and Crocco.—p. 479.
Serologic Test for Cancer. A. H. Roffo.—p. 481.

Eczema and the Vegetative Nervous System.—Castex and Camauer insist that the primary factor in chronic symmetrical eczema is usually some upset in the balance of the vegetative system. Two cases are described in detail, out of their extensive experience, to demonstrate that restoration of the vegetative balance should precede local measures, and may cure without them, merely by correction of autointoxication, abuse of alcohol or tobacco or treatment of congenital syphilis.

Tolerance of Foreign Body in Eye.—Adrogúe and Crocco relate that an iron splinter that had been in the anterior chamber of a recruit since childhood seemed to be so perfectly tolerated that the recruit was accepted without serious attempt to remove the foreign body. The corrected vision was 5/10.

Revista de la Soc. de Medicina Interna, Buenos Aires

1: 341-388 (Aug.) 1925

*Posttraumatic Epidemic Encephalitis. Castex et al.—p. 343.
*Hematology of Amebic Hepatitis. H. J. D'Amato.—p. 352.
*Splenectomy in Endocarditis. P. Escudero and E. V. Merlo.—p. 361.
*The Duodenal Tube in Cholelithiasis. J. W. Tobias.—p. 365.
Gerodermie Eunuchoidism. C. Domínguez and R. Orlando.—p. 372.
*Treatment of Colitis. M. R. Castex and J. J. Beretervide.—p. 383.

Posttraumatic Epidemic Encephalitis.—Castex, Romano and Di Cio have been unable to find any case on record like the one they describe in which the syndrome of epidemic encephalitis developed after a trauma with probable fracture of the skull. The young man had been healthy until he fell in getting out of a street car. He left the hospital much improved in a month; slight strabismus and nystagmus and slight sluggishness in his movements were the only symptoms left.

The Blood with Suppurating Amebic Hepatitis.—D'Amato's findings in thirty cases failed to reveal any differentiating features.

Splenectomy in Treatment of Endocarditis.—Escudero and Merlo report that no permanent benefit was derived from the removal of the large spleen in the case of endocarditis lenta described.

The Duodenal Tube in Cholelithiasis.—Tobias injected magnesium sulphate daily in a man aged 36 subject to gallstone epigastric pains. Large numbers of small gallstones were voided. Two small stones were caught in the tube on one occasion. The patient was advised to continue the use of the duodenal tube daily for a time.

Treatment of Ulcerative Colitis.—Castex and Beretervide report subsidence of all subjective and objective disturbances in three cases of long rebellious chronic colitis under treatment with acriflavin by Crohn and Rosenberg's technic.

Semana Médica, Buenos Aires

2: 1013-1080 (Oct. 22) 1925

*Inguinal Adenitis. F. Destéfano and R. F. Vaccarezza.—p. 1013.
History of Phonendoscopy. A. Bianchi.—p. 1052.
Action of Colchicin on Guinea-Pig Stomach. A. Bergman.—p. 1056.
Compulsory Inspection of Teeth. J. F. de la Madrid.—p. 1060.
Treatment of Surgical Tuberculosis. J. Valls.—p. 1064.
Hen's Egg Containing Second Complete Egg in Its Shell.—p. 1066.

Subacute Inguinal Lymphogranulomatosis.—Destéfano and Vaccarezza report excellent results in treatment of this tenacious disease with antimony and potassium tartrate, used in seventy-two cases in the last two years, bilateral in twenty-six. They gave the drug by the vein in a 1 per cent solution, twice a week; usually four to ten injections sufficed but sometimes up to fifteen or more were given. The only contraindication is kidney disease. The lesions retrogressed under the action of the drug alone, and it did not seem necessary even to incise the abscess. The general health improved likewise. An ice bag was often useful. They reiterate that

the action is so manifest and so constant that it deserves to rank as a specific. The details of the entire seventy-two cases are given. All were completely or partially cured.

Beiträge zur klinischen Chirurgie, Berlin

134: 483-640, 1925

Illumination of Operating Room. E. Heller.—p. 483.
*Tryptic Ferment in Gallbladder. K. H. Erb and F. Barth.—p. 507.
Acute Cholecystitis After Resection of Stomach. Flörcken.—p. 527.
*Osteoporosis and Malacia After Bile Fistulas. H. Dieterich.—p. 530.
Cancer of Cystic Duct. H. Hellner.—p. 554.
*Lipoids and Healing of Wounds. Berberich and Eliassow.—p. 561.
Healing of Fractures. E. Bergmann and C. R. H. Rabl.—p. 567.
Epignathus. E. Stahnke.—p. 573.
Resection of the Cardia. H. Wodsack.—p. 584.
Syphilis of the Stomach. E. Gmelin.—p. 597.
Regeneration of Cartilage. C. Häbler.—p. 602.

Tryptic Ferment in Gallbladder.—Erb and Barth found a proteolytic ferment in the bile in 75 per cent of their grave cases of cholecystitis. They think that it is trypsin transported there by the blood.

Osteoporosis and Malacia After Bile Fistulas.—Dieterich observed an enlargement of the parathyroids in a dog with osteomalacia and osteoporosis due to a persisting biliary fistula.

Lipoids and Healing of Wounds.—Berberich and Eliassow fed large quantities of cholesterol to rabbits. The granulation tissue of aseptic wounds in these animals contained much cholesterol. No lipoids were found in the wounds of animals fed with lecithin, but these wounds showed a tendency to suppurate.

Deutsche medizinische Wochenschrift, Berlin

51: 1935-1974 (Nov. 20) 1925

So-Called Traumatic Neuroses. E. Stier.—p. 1935.
*Scarlet Fever. U. Friedemann and H. Deicher.—p. 1938. C'cn.
Abortion and the Penal Code. H. Küstner.—p. 1941.
Grave Ulcerative Colitis. G. Seefisch.—p. 1943.
Acid Fat Milk. A. Adam.—p. 1946.
Blepharochalasis and Double Lip. W. Eigel.—p. 1947.
*Incubation Period. R. Weichbrodt.—p. 1949.
Electrodialysis of Serum. G. Ettisch and W. Beck.—p. 1950.
Pulmonary Tuberculosis After War Wound. Klieneberger.—p. 1951.
Inertia of the Uterus. Abel.—p. 1952.
*Treatment of Hemorrhoids. R. Semler.—p. 1953.
*Pernicious Anemia in Brothers. F. Johannessohn.—p. 1953.
Diathermy in Intermittent Claudication. G. Scheipner.—p. 1954.
Own Blood or Own Serum? J. Vorschütz.—p. 1954.
Treatment of Furunculosis. Grosschopff.—p. 1955.
Treatment of Meningitis. A. Reiche.—p. 1955.
Treatment of Gonorrhea. F. Dietel.—p. 1955.
Industrial Hygiene. R. Müller.—p. 1958.
Social Insurance and Tuberculosis. Blümel.—p. 1959. C'cn.

Scarlet Fever.—Friedemann and Deicher confirm the American investigations on the etiology and treatment of scarlet fever. They regard the method used by the Dicks in establishing the toxin of scarlet fever as new and entirely original, and they also appreciate Dochez' work. They had at first some difficulties with the preparation of a sufficiently potent toxin, but these were overcome. They conclude that all of Koch's requirements for the acceptance of the streptococcus etiology of scarlet fever have been fulfilled. They obtained a small amount of the Dochez serum which they used in fourteen grave cases. It did not influence the complications due to the cocci, but its antitoxic potency was at least ten times greater than that of the best convalescent serum.

Incubation Period.—Weichbrodt infected a general paralysis patient simultaneously with malaria and relapsing fever. The recurrens infection did not become manifest until after the malaria had been cured with quinine. He thinks that a similar depressive immunity may be the explanation of the action of malaria treatment on general paresis.

Treatment of Hemorrhoids.—Semler points out that a slight insufficiency of the heart frequently causes dilatation of the hemorrhoidal veins. He had good results with treatment of hemorrhoids by suppositories containing digitalis.

Pernicious Anemia in Brothers.—Johannessohn observed pernicious anemia in two brothers in the sixties. Achylia had been manifest in both and also in the mother, who died from cancer of the stomach.

Klinische Wochenschrift, Berlin

4: 2233-2280 (Nov. 19) 1925

*Histophysiology of the Artery Wall. N. Anitschkow.—p. 2233.
Microcapillary Pulse. H. Heimberger.—p. 2235.
Heart Rhythm in Vaisalva's Experiment. Mosler and Burg.—p. 2238.
*The Lymphocyte Question. S. Bergel.—p. 2242.
Contractions of Nonpregnant Uterus. H. Hinselmann.—p. 2244.
Psychogenia and Diagnosis. H. Fendel.—p. 2246.
*Eidetic Predisposition (Jaensch) in the Young. P. Karger.—p. 2247.
*Peripheral Thrombolysis. G. Nagy.—p. 2249.
Cultivation of Tubercle Bacilli. K. Weise and H. Fernbach.—p. 2250.
*Glycemia and Cancer. F. Silberstein et al.—p. 2252.
Simplified Time Record. H. Dreyfuss.—p. 2252.
*Size of Erythrocytes. G. Taubmann.—p. 2254.
*Function of Supernumerary Extremity. R. Kahn.—p. 2255.
*Innervation of Mamma. R. Kahn.—p. 2256.
*Insulin and Pituitary Hormone. J. Serebrijski and H. Voilmer.—p. 2256.
*Menstrual Complication. P. Zadik.—p. 2257.
Conservative Treatment of Surgical Tuberculosis. Staub-Oetiker.—p. 2257.
Methemoglobin and Catalytic Action. R. Meier.—p. 2261.
Merger of German Dye Factories. W. Heubner.—p. 2279.

Histophysiology of the Artery Wall.—Anitschkow reviews chiefly the experiments made by himself and his collaborators on the permeability of the walls of large arteries. Injections of trypan blue demonstrated the presence of a current of lymph passing from the lumen of the arteries to the adventitia. The endothelium behaves like an enormous capillary. The imbibition of the arteries is most pronounced at the points which are under a mechanical strain or which are injured from the outside. Addition of acid or hypotonic solutions delay the imbibition, alkalis promote it. The same injuries enhance the penetration of lipoids into the wall. This process, which he regards as the most important factor in the genesis of atherosclerosis is only an exaggeration of the normal formation of lymph in the arteries. The products of plasma proteins appear in the form of a hyaline substance in the space between the endothelium and the internal elastic membrane. They represent an infiltration, not a degeneration, of the wall of the artery.

The Lymphocyte Question.—Bergel discusses the significance of the lymphocyte. He is opposed to the overestimation of the reticulo-endothelial system. Spirochetes thrive in it, while they are destroyed by lymphocyte infiltrates.

Eidetic Predisposition in the Young.—Karger tested children for their ability to visualize pictures they had been looking at. Contrary to Jaensch, who discovered this eidetic phenomenon ("eidetic constitution"), he failed to find any relation to tetany or hyperthyroidism. The children who manifested this faculty were generally of a cheerful, bright and otherwise normal type. Some of them were dreamers. The eidetic faculty disappeared with puberty.

Peripheral Thrombolysis.—Nagy produced the Rumpel-Leede phenomenon. He found a marked lowering of the number of blood platelets in the blood of the arm; it may affect even their number in the general circulation. He concludes that thrombopenia is a sequel—not a cause—of the hemorrhagic diathesis.

Glycemia and Cancer.—Silberstein, Freud and Révész observed a gradual increase of the reducing power of the blood during insulin treatment of patients suffering from cancer. Later, the blood sugar frequently decreased. They do not attribute the increased reducing power to alpha-beta glucose.

Size of Erythrocytes.—Taubmann recommends to use in Löwy's method the blood from diabetic patients, which has little affinity for acid stains. These slides are stained for three or four minutes with a 1 per cent solution of methyl green, and dried. The blood to be tested is smeared on the same slide, with cautious fixation by heat, and is stained with eosin.

Function of Supernumerary Extremity.—Kahn observed a case of spontaneous hypermelia in a frog. The extremity was not in motor or sensory connection with the central nervous system, but the central vasomotor regulation was manifest. The muscles were in perfect condition. This speaks for the independent development of muscles and of the central nervous system.

Innervation of Mamma.—Kahn found more casein and fat in the milk from the denervated mammary gland of guinea-

pigs than in the milk from the normal side. The sugar content varied.

Insulin and Pituitary Hormone.—Although insulin alone inhibits diuresis, it inhibited the antidiuretic action of pituitary extracts in Serebrijski and Vollmer's experiments.

Menstrual Complication.—Zadik reports a case of chlorosis. The young girl had always, at the time of each menstruation, a pink to red secretion oozing from the nipples. It contained no erythrocytes nor lipoids.

Medizinische Klinik, Berlin

21: 1751-1788 (Nov. 20) 1925

Treatment of Obesity. O. David.—p. 1751.
Climatology of High Altitudes. C. Dorno.—p. 1754.
Surgery of Rectal Cancer. H. Lorenz et al.—p. 1757. C'tn.
Hypersensitiveness. L. W. Samson.—p. 1760.
Protective Dressing. L. Moll.—p. 1762.
*Spontaneous Gangrene. V. R. Stühlern et al.—p. 1765.
*An Eosinophilic Leukemoid Syndrome. P. Schmidt-Weyland.—p. 1767.
*Roentgenotherapy in Peripheral Paralysis. F. Kraus.—p. 1768.
The P_H of Urine in Dermatoses. F. Jacobsohn and A. Joseph.—p. 1771.
Physical Therapy. G. Hauffe.—p. 1774. C'td.
Quinin in General Practice. Saphra.—p. 1775.
Baron Löschner, 1809-1887. F. Pick.—p. 1784.

Spontaneous Gangrene.—Stühlern, Agulowa and Babkowa had good results with small doses of pilocarpin and insulin in treatment of spontaneous gangrene. They discuss the influence of these remedies on the blood sugar.

An Eosinophilic Leukemoid Syndrome.—Schmidt-Weyland reports on a case of eosinophilic leukocytosis (67 per cent of the 90,000 leukocytes were eosinophils), with ulcers in the sigmoid, and eosinophil infiltrates in the mesenteric nodes and spleen. On account of the absence of younger forms, the diagnosis of leukemia is uncertain.

Roentgenotherapy in Peripheral Paralysis.—Kraus has now applied to clinical cases the results of his experimental work. He reports favorable results from roentgen-ray therapy combined with diathermy and other physical methods in patients suffering from facial, popliteal and other paralysis, and in a case of suture of an injured radial nerve.

Münchener medizinische Wochenschrift, Munich

72: 1995-2042 (Nov. 20) 1925

*Treatment of Gastric Ulcer. P. Morawitz.—p. 1995.
*Paroxysmal Tachycardia. W. Stepp and E. Schliephake.—p. 1997.
Visualization of the Gallbladder. H. Stegemann.—p. 1999.
*Roentgenoscopy Without Darkness. G. Bucky and P. Stumpf.—p. 2001.
*Optic Radiation. R. Cords.—p. 2003.
*Venesection. Nonnenbruch.—p. 2004.
*Reposition of Dislocated Mandible. O. Wiedhopf.—p. 2007.
Bleeding Gallbladder. H. Heusser.—p. 2007.
*Aromatic Oxyacids in Blood. E. Becher et al.—p. 2009.
*A New Principle for Titration. L. Flatow.—p. 2009.
*General Paralysis. J. Schükry.—p. 2011.
*Vaginal Acidity and Gonorrhea. C. L. Rehn.—p. 2011.
Treatment of Eczema. H. Nagell.—p. 2014.
Treatment of Cholera Infantum by Monrad's Method. A. Bratusch-Marrain.—p. 2015.
Conservative Treatment of Furuncles. J. Fabry.—p. 2016.
Increasing the Resistance of the Skin. A. Bacmeister.—p. 2017.
*Etiology of Endemic Goiter. H. Ritzmann.—p. 2018.
Cloudiness of Aqueous Solution of Boric Acid. E. Wirth.—p. 2019.
Jean Paul F. Richter and Medicine. G. Sticker.—p. 2019. C'en.
Sleep in Children. F. Hamburger.—p. 2021.
Gymnastics in Schools. A. Bier.—p. 2024.

Treatment of Gastric Ulcer.—Morawitz advises to try internal treatment first, even for patients with a niche. The immediate danger of surgical treatment is not great, but grave disturbances ("gastro-enterostomy disease") are quite frequent. Some people cannot get along without gastric digestion. Another reason is the spasm of the wall of the stomach, which he considers important in the genesis of the ulcer as well as of the accompanying pains. He supplements the Sippy treatment with atropin, starting with four pills containing 0.25 mg. each, and increasing until the limit of the patient's tolerance (dryness in the mouth) is reached. Parenteral protein therapy may do some good, but it is no substitute for the diet treatment.

Cholin in Paroxysmal Tachycardia.—Stepp and Schliephake's patient had attacks of paroxysmal tachycardia. Between them the auricles still contracted 220-240 times per minute, but conduction was blocked 3:1 or 2:1. They controlled the attacks at first with intravenous injections of 0.5 to 0.75 quinin or of strophanthin. Later on this treatment became dangerous because of the frequency of the attacks. They obtained full and practically immediate success with intramuscular injections of a preparation of cholin. Great caution is necessary with intravenous injection (0.5 cc. of a 5 per cent solution of cholin chlorid). A further dilution and slow injection are advisable.

Roentgenoscopy Without Darkness.—Bucky and Stumpf have devised a simple method which makes it possible to do skiascopy in a lighted room. The light radiating from the fluorescent plate is a monochromatic green. Consequently it has proved possible to find a filter of equal color through which this light passes freely, and which yet absorbs completely the complementary red light used in the room. This light can be sufficiently strong for reading or writing, and the plate appears black unless exposed to the roentgen light. The details of the picture are as clear as in a darkened room, if not clearer. The green filter may be applied either to the plate or made in the form of eye glasses. They mention a few of the numerous advantages of the invention.

Optic Radiation.—Cords analyzed six cases of hemianopia due to a lesion of the optic radiations. The optomotor ("railroad") nystagmus toward the blind side (opposite to the lesion) was absent in all of them.

Venesection.—Nonnenbruch recommends to withdraw about 5 cc. of blood per kilogram of body weight in a therapeutic venesection. It is indicated in apoplexy with signs of heart insufficiency and plethora, especially of the head. It is strictly contraindicated in the so-called ischemic apoplexy due to thrombosis and embolism. Only in air embolism a beneficial action may be observed. Polycythemia is favorably influenced. The diuretic action is manifest in cases in which venesection relieves the congestion of the kidneys. Contrary to Becher, he has found that venesection does not raise the nonprotein nitrogen of muscles after nephrectomy any more than it would increase without venesection. He discusses the theories suggested to explain the effects of venesection, but admits that we do not know much about it.

Reposition of Dislocated Mandible.—Wiedhopf confirms the excellent result of injection of about 5 cc. of a local anesthetic into the temporal, masseter and pterygoid muscles. Reduction is easily made five or ten minutes later.

Aromatic Oxyacids in Blood. — Becher, Litzner and Doenecke found aromatic oxyacids in normal blood. Large amounts (600-700 cc.) of blood were necessary. The greater part of the oxyacids was apparently free.

A New Principle for Titration.—Flatow has devised what he says is a new titrimetric principle which seems to be adaptable to a great variety of problems. He uses a dilute solution of an indigo salt for titration of potassium ferricyanid in an alkaline solution. The application of the method for determination of the smallest amounts of glucose and uric acid is given. It is probable that the diazo compound found by Leimdörfer in the blood is also determined by this titration.

General Paralysis.—Schükry made the Spatz iron reaction on the brain in 147 cases. It was positive in all the thirty-seven patients with a clinical diagnosis of general paralysis and negative in all the others. He attributes the current opinion on the rarity of the disease in the Orient to a lack of diagnostic means. He found the disease in 7.5 per cent of the male and in 2.5 per cent of the female inmates of the insane asylum in Constantinople. It was encountered in some patients who came from the central parts of Asia Minor.

Vaginal Acidity and Gonorrhea.—Rehn confirms the value of Danin's litmus paper test for gonorrhea. Only 1.5 per cent of his fifty-six gonorrhea patients had an acid reaction of the vaginal (not cervical) secretion. In doubtful cases, he presses a filter paper (about 1 cm. square) against the wall of the vagina, extracts the paper with 5 cc. of distilled water, adds five drops of a phenolphthalein solution and titrates with one hundredth normal sodium hydroxid. Values below 0.1 are almost pathognomonic for gonorrhea, while an acidity

of 0.12 practically excludes it. The determination of the reaction with indicators is also of value. An alkaline reaction is, however, rare.

Etiology of Endemic Goiter.—Ritzmann observed an epidemic of acute goiter (with hypothyrosis) in two children, a group of young dogs, and a few young pigs—all fed on the fresh milk from a group of cows. At the same time seven of the new-born calves had large goiters. There were no further cases of the disease after the cows had been brought in from the pasture. He suggests, as one of the possible causes, the deficiency of calcium in the soil of his district together with the omission of the usual calcium fertilizer in that and the preceding year. Another possibility might be the plant *Chaerophyllum hirsutum*, which occurs in these pastures, and which is called "calves' goiter"—perhaps not without reason.

Wiener klinische Wochenschrift, Vienna

38: 1277-1300 (Nov. 26) 1925

*Prevention of Goiter. J. Wagner-Jauregg.—p. 1277.
*A Hormone of Heart Action. L. Haberlandt.—p. 1280.
The Blood After Transfusion. A. Sachs and E. Widrich.—p. 1281.
*Biology of the Placenta. L. Kraul and L. Bodnar.—p. 1282.
Sulphur Baths. E. Maliwa.—p. 1284.
Ulcers of Stomach and Duodenum. G. B. Gruber.—p. 1288. C'cn.
The Question of School Vacations. J. K. Friedjung.—p. 1290.
Treatment of Acute and Chronic Suppurating Processes. A. Fraenkel. Supplement.—pp. 1-20.

Prevention of Goiter.—Wagner-Jauregg analyzes the alleged frequency of hyperthyroidism developing from the use of iodized salt, and concludes that only extremely few cases are probable. The amount of iodin contained in Austrian *Vollsalz* (5 mg. per kilogram of salt) corresponds to less than the amount of iodin ingested by the food in the average community.

A Hormone of Heart Action.—Haberlandt observed an accelerating action in the fluid in which the sinus or basal part of the ventricle of the frog heart had been beating. The artificially irritated apex of the heart produced no such substance. Haberlandt believes that it is a hormone of the heart action, but he does not believe that it is identical with the "accelerans substance" discovered by Loewi.

Biology of the Placenta.—Kraul and Bodnar found much more arsenic in the blood from the umbilical cord than in the retroplacental hematoma in cases in which neoarsphenamin had been injected.

Zentralblatt für Chirurgie, Leipzig

52: 2513-2576 (Nov. 7) 1925

*Autohemotherapy of Postoperative Bronchitis. E. Graser.—p. 2514.
Retrograde Incarceration. E. Pólya.—p. 2518.
Surgery of Cancer of Breast. G. Steigelmann.—p. 2522.
Care of the Stump After Appendectomy. L. Seyberth.—p. 2525.
Peritonitis of Hernial Sac. B. Cohn.—p. 2526.
Surgery of Scoliosis. Plagemann.—p. 2528. Comment. Perthes.—p. 2539.

Autohemotherapy of Postoperative Bronchitis.—Graser used Vorschütz's method in sixty cases. If the injection of 40-80 c.c. of the patient's own blood is made on the same day in which the fever occurs, the temperature and subjective sensations almost invariably become normal on the next day. This occurs in spite of an occasional further short clinical progress of the pneumonia.

52: 2641-2688 (Nov. 21) 1925

Gold Treatment of Surgical Tuberculosis. Siedamgrotzky.—p. 2642.
Pyloric Ulcer in Poisoned Child. R. Stohr.—p. 2644.
Diverticulum of the Appendix. F. v. Fáykiss.—p. 2647.
Exostosis Bursata. A. Abramowa.—p. 2649.
"Treatment of Intestinal Fistulas." P. Ahrens.—p. 2655.
*"Ulcer Recurrence After Resection." M. Friedemann.—p. 2659.
"Technic for Bone Sutures." R. Demel.—p. 2664.

"Ulcer Recurrence After Resection."—Friedemann attributes the recurrence of gastric ulcer after resections to the fact that the resection of the stomach was not extensive enough.

52: 2689-2752 (Nov. 28) 1925

Hernias of the Supravesical Fossa. K. Vogeler.—p. 2690.
*The Mesenteriolum in Appendicitis. S. Rubaschow.—p. 2695.
Discission Treatment of Varicose Veins. F. Bange.—p. 2696.
Early Skin Symptoms in Cancer. A. Harf.—p. 2699.
Local Anesthesia in Surgery of the Stomach. O. Orth.—p. 2701.
Arthroplasty. J. Hass.—p. 2702.
Suspension Treatment of Spondylitis. S. C. Yü.—p. 2706.
Intraneural Injections. H. Boit.—p. 2708.
Foreign Bodies in Alimentary Tract. L. P. Mariantschik.—p. 2710.

The Mesenteriolum in Appendicitis.—Rubaschow found various pathogenic germs on the mesenteriolum in twenty-five of thirty-five cases of appendicitis.

Zentralblatt für Gynäkologie, Leipzig

49: 2513-2592 (Nov. 7) 1925

Roentgen Dosage in Gynecology. T. Neeff.—p. 2513.
Temporary Roentgen Sterilization of Women. H. Weigand.—p. 2525.
*Sources of Error in Interfereometry. A. Streck.—p. 2538.
*Acetylene Anesthesia. J. Maier and E. Mauerer.—p. 2544.
*Acetylene Anesthesia and Postpartum Period. E. Mauerer.—p. 2551.
*The Blood in Acetylene Anesthesia. E. A. Mueller.—p 2556.
*Diagnosis of Gonorrhea in Women. W. G. Schultz.—p. 2559.
Diagnosis of Retroflexion of the Uterus. H. Stribrny (Silber).—p. 2571.

Sources of Error in Interfereometry.—Streck gives details of the sources of error in interfereometric seroreactions in pregnancy and cancer.

Acetylene Anesthesia and Postpartum Period.—Mauerer finds that acetylene anesthesia frequently shortens the postpartum period and reduces the hemorrhage.

The Blood in Acetylene Anesthesia.—Mueller found that acetylene anesthesia does not influence a previously normal blood count.

Diagnosis of Gonorrhea in Women.—Schultz reports on the war experiences in Gauss' service, Würzburg. The cervix and urethra were simultaneously affected in 90.5 per cent. of their cases. In 75.4 per cent. of them the rectum was also affected. The best instrument to obtain specimens from the urethra was found in Asch's blunt spoon; from the cervix, Asch's forceps; from the rectum, the spoon used in examination for worms. It was of great advantage to clean the urethra or cervix, superficially, by dabbing with gauze before securing the smear. The procedure frequently fails, if made less than two hours after the last micturition. The results were positive in 98.9 per cent. of their cases. If five smears are negative, a combined mechanical, chemical and biologic provocation with ten subsequent smears is advisable.

Zentralblatt für innere Medizin, Leipzig

46: 1097-1112 (Nov. 14) 1925

*Blocking the Splanchnic Nerves. M. Kappis.—p. 1097.

Blocking the Splanchnic Nerves.—Kappis recommends to make the patient lie down on the side opposite to that of the injection. The needle is inserted just below the twelfth rib, about 7-8 cm. from the median line, at an angle of 30-40 degrees to the sagittal plane. The needle should be 10-12 cm. long. At a depth of 7-9 cm. one feels the body of the vertebra, and palpates with the needle forward until it glides over the edge of the vertebra. It is pushed in then but not more than for 0.5 cm. The fluid (30-40 c.c. of a 0.5 per cent. procain solution) must not be injected before ascertaining the possibility of being in a vein (cava) or the spinal canal. It is best to have the patient cough and strain. Deaths have occurred from overlooking this measure.

Časopis lékařů českých, Prague

64: 1645-1680 (Nov. 14) 1925

Nocturnal Pathology. K. Weber.—p. 1646. C'cn., p. 1698.
Kidney Function Tests in Surgery. K. Neuwirt.—p. 1651.
*Flint's Sign and Aortic Disease. Stanojević and Vančura.—p. 1654.
Medicolegal Case of Hebephrenia. T. Hegner.—p. 1658.
*Standardization of Antitetanus Serums. B. Feierabend.—p. 1661. C'cn.
Physical Chemistry in Biology. V. Podroužek.—p. 1665. C'cn.
Antiphlogistic Action of Camphor. S. Petlach.—p. 1666.
Migraine. J. Grozdanović.—p. 1668. C'cn., p. 1704.

Flint's Sign and Aortic Disease.—Stanojević and Vančura found Flint's presystolic murmur and fremitus in twenty-two of 256 cases of aortic insufficiency. Two of them came to necropsy: No changes of the mitral ostium were found. The atrioventricular conduction time was prolonged. The symptom has probably a similar, if not identical origin with the gallop rhythm. The relative stenosis of the mitral ostium is due to a dilatation of the left ventricle, with good function of the fibrous and muscular ring around the mitral valve.

Standardization of Antitetanus Serums.—Feierabend tested various commercial preparations of tetanus antitoxin imported into Czechoslovakia. None of them contained the amount of antitoxin claimed. This is especially important in the preventive use of the serum. He lost a horse injected prophylactically with antitoxin which had only one eighth of the strength claimed.

Prophylaktitcheskaia Medicina, Kharkov

4: 1-248 (Oct.) 1925. Partial Index

*Vaccine in Scarlet Fever. A. Beresneff.—p. 12.
Prophylaxis of Measles. A. Skrotzky.—p. 36.
American Schools from Health and Hygiene Standpoint. Marzeef.—p. 62.

Vaccination in Scarlet Fever.—Beresneff's observations were made on 129 untreated scarlet fever patients and 103 that had been treated with Zlatogoroff's vaccine, injected subcutaneously every half hour, or two hours, till the fever subsided and the eruption disappeared. The injections were not given to patients with albuminuria or already subsiding eruption. The eruption improved the next day, disappearing usually on the third or fourth day of the disease. The general condition showed marked benefit, and nephritis seemed to occur less frequently under this treatment. The vaccine did not exert any influence on other complications. The mortality was 8.7 per cent. among the treated, 11 among the untreated. Protective inoculation was used in 1,939 children, mostly from 5 to 16 years old. Zlatogoroff's culture is not killed by heat, but 0.5 per cent. of phenol is mixed with it. The streptococci number a thousand millions per cubic centimeter. From one to three injections of 0.1 to 0.5 c.c. of the vaccine were given at five to seven day intervals. Only two of the vaccinated contracted mild scarlet fever, although they were not isolated from scarlet fever patients. About 1,495 Dick tests were applied for control. The test appeared to be positive in twelve children with a scarlet fever history; in 20 per cent. of the vaccinated, and in 25 per cent. of the nonvaccinated with no history of scarlet fever. Thus the difference between the groups was insignificant. There was also a large number of false and uncertain reactions.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 2067-2186 (Nov. 7) 1925

*Medical Education in Europe. G. van Rijnberk.—p. 2068. C'cn.
*Diagnosis of Epidemic Encephalitis. L. Bouman and E. Janzen.—p. 2070.
*Multiple Cases of Scarlet Fever. Veldhuyzen and Vos.—p. 2087.
*Fistula from Overlooked Sponge. C. Knapper et al.—p. 2096.
*The Hangman as a Medical Practitioner. M. A. van Andel.—p. 2100.

Medical Education in Europe as Seen by an American.—Van Rijnberk here concludes his long analysis of what he calls "this marvellously well conceived and admirably written book of Flexner's. It is incredible the amount of matter and authentic data that are compressed into the short sentences, clear and sharp as if cut from rock crystal. It is a book crammed with information and wisdom."

Diagnosis of Epidemic Encephalitis.—Bouman and Janzen chart the early symptoms of beginning epidemic encephalitis as observed in 1,174 cases. Headache heads the list, noted in 46 per cent.; vomiting, diplopia, character changes, delirium and tremor in, respectively, from 18 to 5 per cent. In their personally observed cases, sleeplessness as an early symptom was nearly as common as somnolency. They list thirty-three early symptoms, commenting on their great variety and on the dethroning of the Argyll Robertson sign as specific of syphilis, and of bilateral paralysis of accommodation, without pupil disturbances, as peculiar to diphtheria, and of the facialis phenomenon as pertaining exclusively to tetany—all these may be encountered in incipient epidemic encephalitis. The most instructive, however, besides the sleep and ocular muscle disturbances, are the hyperkinesis and akinesis, especially the expressionless atony of the face muscles and the dazed aspect.

Multiple Cases of Scarlet Fever.—Of the 1,310 recorded cases of scarlet fever in Amsterdam during 1924, all but 282 were in separate families. Two families had five and twenty-one had three cases. In fourteen of the 146 home treated multiple cases, the interval was less than a week between the first and second cases, as also in eighty-seven of the 1,146 hospital treated. Some of the numerous cases of infectious sore throat at the time may have been abortive scarlet fever. Repeated mild infection from these carriers may have entailed immunity. This assumption would explain the lesser susceptibility to scarlet fever of older children.

Fistula Between Bladder and Small Intestine.—A large calculus in the bladder had formed around one end of a gauze sponge. The rest of the gauze lay in the adherent small intestine. A tumor near the uterus had been removed a year before. The gauze was removed through a laparotomy but fatal peritonitis followed.

Practice of Medicine by the Hangman.—Van Andel presents evidence that in the seventeenth and eighteenth century the hangman assumed the right to practice medicine and surgery. His article is entitled "Our Confrère the Hangman," and tells of the long efforts of the organized profession to put an end to this custom.

Hospitalstidende, Copenhagen

68: 969-984 (Oct. 22) 1925

*Protein-Fat Ratio in Diabetic Blood. L. O. Christensen.—p. 969.
Subacute Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 974. C'td.

Relations Between the Protein and the Fat Content of the Serum in Diabetes.—The range in three diabetics in coma was, with protein, from 5.77 to 10.47 per cent while the fat varied only from 0.06 to 0.16 per cent. The fat content was normal in all but three of sixteen free from coma and of seven in eleven with impending coma. No subnormal fat percentage was recorded in any instance, and an exceptionally high content only once. In cases of nephrosis the hydremia is more pronounced than in diabetes; possibly this may have something to do with the lipemia common with nephrosis. In one case of the latter the serum protein was 5.09 and the blood fat 0.4 per cent.

Ugeskrift for Læger, Copenhagen

87: 923-948 (Oct. 22) 1925

Atypical Eruptions. H. Heckscher.—p. 923.
*Injection Treatment of Varicose Veins. V. Meisen.—p. 929. C'en, p 964.
Genius Epidemicus at Copenhagen. A. Magelssen.—p. 933.
*Diagnosis of Blood Disease. I. Freuchen.—p. 936.
*Fatal Gastric Hypersecretion. H. S. Biilmann.—p. 937.
Emphysema During Expulsion Period of Labor. A. G. Lauritzen.—p. 938.

Injection Treatment of Varicose Veins.—Meisen describes with illustrations his extensive experience with injection of sodium citrate or sodium salicylate to induce thrombosis and obliteration of the lumen of varicose veins. His experiments on horses and laboratory animals confirmed the even and regular thrombus that formed, and its tight clinging to the wall. These favorable findings were reproduced in fifty clinical cases. Eczema and leg ulcers of many years' standing healed promptly; one leg ulcer had a twenty-four year history. The cure was complete with from two to twenty-five injections of the 20 to 40 per cent. solution of sodium citrate. In five cases an ascending chemical phlebitis was observed. It was arrested by proximal constriction or staying in bed. Otherwise this obliterating treatment must not be applied to bed-ridden patients. He warns that it requires skill and practice, but adds that it seems destined to supplant operative measures entirely in treatment of varicose veins.

Diagnosis of Blood Disease.—Freuchen takes a smear of the suspected blood and a smear from a normal subject. Comparison of the two shows up readily the special pathologic features.

Paroxysmal Gastric Hypersecretion.—Biilmann's patient was a man aged 48 who from childhood had had recurring attacks of pain in the stomach, relieved by profuse vomiting of gastric juice. The amount increased with years; at times the constant vomiting kept up day and night for two to four days. A chronic nephritis seemed to contraindicate surgical treatment of the hypersecretion. He was brought moribund to the hospital, the aspect resembling that of cholera. This is Biilmann's second case of fatal hypersecretion—the patients refusing operative intervention. The treatment should be modeled on that for cholera, supplemented by gastro-enterostomy.